

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 657.—VOL. XVIII.

LONDON, SATURDAY, MARCH 25, 1848.

[PRICE 6D.]

### Stannaries of Cornwall.—In the Vice-Master's Court.

HILL & VIGERS.

IN RE FOLDBROU.

OTHERWISE SAINT AGNES CONSOLIDATED MINES.

NOTICE IS HEREBY GIVEN, that the SALE of the ENGINES, MACHINERY, MATERIALS, and EFFECTS upon and belonging to the above-mentioned MINES, is POSTPONED until the month of APRIL next.

HODGE & HOCKIN.

For GRYLLS & HILL, Solicitors, Helston.

Dated Registrar's Office, Truro, March 1, 1848.

**NORTH WHEEL ROBERT MINE, near HORRABRIDGE.**  
TO BE SOLD, AT AUCTION, AT THE MINE, BY GEO. CARNE, auctioneer, on Monday, the 27th March inst., at Twelve o'clock at noon (without the least reserve).

THE FOLLOWING

**MINE MATERIALS.—VIZ.:**  
ONE WATER-WHEEL, 30 ft. diameter, and 3 ft. breast, with launders, beams, and brasses.  
ONE BOB-STAND AND BRASSES; one wheel, pulleys, and poppet-heads.  
About 60 fathoms of IRON-RODS, 1 1/2 to 2-inch diameter.  
ONE LIFT OF 6-inch PUMPS, including working barrel, windbore, clack, doorpiece, &c.  
ONE LIFT OF 8-inch PUMPS, with working barrel, windbore, clack, doorpiece, &c.  
TWO NEW 8-inch PUMPS, at Plymouth Foundry.  
ONE BALANCE-BOB, complete; sundry pulleys and stands, one pendulum, complete.  
A lot of miners' and smiths' tools, smiths' bellows, vice, screw, anvil, kieve, a crane and gudgeon, with sundry tools of iron, leather, chisels, ladders, lead pipe, dressing tools, &c.  
Count-house table and chairs, with other articles.  
For viewing the same, apply to Capt. Heath, on the mine; and for further particulars to John Paul, Tavistock; or the auctioneer, Plymouth.

N.B.—All persons having claims on the adventurers, are requested to send the same to the surveyor, John Paul, Tavistock, Devon—March 11, 1848.

**VALUABLE TIN SETT FOR SALE.—TO BE SOLD,**  
BY PRIVATE CONTRACT, THE SETT OF WEST WHEEL BEAM MINE, with the MACHINERY, WHEELS, PUMPS, ENGINES, &c., in the most perfect and complete state for the effectual working of the mine.

WEST WHEEL BEAM is situated in the centre of a rich mining district, near ASHBURTON, DEVON, and is to be sold for a term of 21 years, subject to the dues of 1-15th and a lord's rent. The sett extends over about 1000 fathoms in length, on the course of the lodes, and 700 fathoms in width. Several tin and copper lodes run through the sett, only two of which have been opened, and from those large returns have been made.

The mine being supplied with all requisite machinery and erections, and possessing an ample water-power, can be worked to the greatest advantage with little outlay.

Application for further information may be made to James Woodley, Esq., the proprietor, at the office of Mr. George Cauter, solicitor, Ashburton; or to Mr. Richard Bracewell, London Inn, Ashburton.

**TO BE SOLD, OR LET, a valuable COAL MINE, in the**  
township of GREAT HARWOOD, in the county of LANCASTER. The mine has been recently proved, and found to be 3 feet 2 inches in thickness, and of excellent quality; it is commonly called, or known, by the name of the UPPER MOUNTAIN MINE, and extends over about 1000 statute acres, which will be divided into suitable lots.

The property is situated between the towns of Blackburn and Clitheroe, and is intersected by a branch of the East Lancashire Railway.

A section of the borings may be seen, by applying to Mr. Boose, Rufford-hall, Ormskirk; or to Mr. Whittle, coal viewer, Charnock Richard, Chorley—to either of whom proposals may be sent.

**EXTENSIVE IRON-WORKS.—FOR SALE, BY PRIVATE**  
BARGAIN, the BLAIR IRON-WORKS, belonging to the Ayrshire Iron Company, situated in the parish of Dalry, and county of Ayr.

These works, which have been recently erected at an immense cost, consist of two blowing-engines, five blast-furnaces, workmen's houses, steam-engines for working the mine-rails, together with utensils of the pits, furnaces, &c., all in working order, and capable of producing upwards of 35,000 tons of pig-iron per annum.

One of the blowing engines, high-pressure, estimated at 90-horse power, was erected in 1841; the other, a condensing engine, was erected in 1847, and is estimated at 200-horse power; the latter being capable of blowing five furnaces, and both fitted up in the most substantial manner, and at present in the best working condition.

The furnaces have been erected with the greatest care, and are fitted with air-heating apparatus of the most approved construction. The make of each furnace has generally averaged upwards of 150 tons of iron per week, and some of them have produced 160.

There are, besides the manager's house and store buildings, 167 workmen's houses, in a habitable state, attached to the furnaces and pits, and there are 20 partly built, which could be finished at a small additional outlay. There are also a new foundry, Wright shop, fire-brick work, smithy, &c.

**THE MINERAL FIELDS, consist of COAL, IRONSTONE, LIMESTONE, and FIRE-CLAY, held in lease, by the company, at moderate fixed rents and Royalties, all situated within easy distances of the furnaces, and for the most part have the advantage of railway communication.**

The COAL-FIELDS consist of several hundred acres, of which only a small portion has been wrought. Several pits, fitted with good engines and machinery, are sunk to the coal, and partly in operation.

The IRONSTONE consists of the well-known black-band, yielding about 3000 tons of calcined stone per acre; and it has been estimated that there are 300 acres or thereby still to work—besides which, there is a large extent of clay-land ironstone, hitherto little wrought, but capable of yielding a large output. There are 15 pits, with excellent steam-engines—some of them in present operation, and others ready to resume working.

The LIMESTONE QUARRY is worked by open cast, and is connected with the works by railway.

The FIRECLAY is abundant, of excellent quality, and cheaply produced. The Glasgow, Paisley, Kilmarnock, and Ayr Railway (extending to Carlisle), passes close to, and has connection with, the furnaces—by means of which, and others in connection with it, the produce can be conveyed to the city and port of Glasgow (32 miles off), and to the wharves on the Ayrshire coast, each within a few miles of the works.

There is a large stock of calcined ironstone, coal, and limestone on the ground, so that the works may be put into immediate operation, and, under judicious management, the manufacture of pig-iron may be carried on to the greatest advantage. The concern will be found to be well worth the attention of persons having the requisite capital, and affords an opportunity of entering into the business seldom to be met with.

**MALLEABLE IRON-WORKS.**—Considerable progress has been made in the erection of extensive malleable works, which, when completed, will be capable of turning out 800 tons of bar-iron weekly. The mass of the necessary machinery has been prepared by the contractors; and a portion of the work could be brought into operation in a few months to produce the half of the above estimate. This work is nearly adjoining the Pig-iron Works, and connected by railway, and will be sold either together therewith or separately.

Plans of the property and mineral workings lie for inspection at the Ayrshire Iron Co.'s office, 113, St. Vincent-street, Glasgow, where, on application to Mr. Brown, every necessary information will be afforded, and orders given for inspection of the works.

**VALUABLE SEA-SALE COLLIERIES TO BE LET.**  
TO BE LET, and entered upon on the 1st of July next, the valuable current-working COLLIERIES of EVENWOOD and NORWOOD, in the county of Durham.

These collieries are situated upon the line of the Stockton and Darlington Railway, by which the coals are conveyed to the shipping ports of Stockton and Middlesbrough; and, also, by means of this, and the York and Newcastle, and Leeds and Thirsk Railways, the coals have access to the important land-sale trade of Northallerton, Thirsk, Ripon, York, the least-mining districts, and other towns in Yorkshire, and for shipment on the Ouse and, by means of the proposed North Yorkshire Union Railway, with the important land-sale trade of the western parts of Yorkshire and Westmorland.

The royalties are very extensive. Two seams of coal are in working—one upwards of 6 feet, and the other of 3 feet. The pits are at a moderate depth from the surface, and the coal is worked at an exceedingly cheap rate, and is much prized as a household coal, both for export and land-sale.

The entering tenant has the option of taking what stock he may require, at a valuation; and the amount of capital required to enter upon the collieries will be of very small amount.

For particulars apply to Thomas Wheldon, Esq., Barnard Castle; or to Nicholas Wood, Esq., Newcastle-upon-Tyne.—Newcastle, March 3, 1848.

**VALUABLE PUMPING AND WINDING ENGINES FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, at WHEEL VOR MINE, in the parish of BREGAGE, CORNWALL.**

1 80-inch DRAUGHT ENGINE, 10-foot stroke in cylinder, and 8 feet in shaft, main beam and cap, top nozzle, spring piston and rod—all new this year; with four boilers, of 12 tons each, in excellent repair.

1 80-inch DITTO, 10-foot stroke in cylinder, 7 1/2 feet in shaft, cylinder, piston, bottom and cover, nearly new, with two boilers, of 12 tons each, and three boilers, of 10 tons each, all lately thoroughly repaired.

1 40-inch DITTO, 9-foot stroke in cylinder, and 7 feet in shaft, without boilers.

1 20-inch WINDING ENGINE, 5 feet stroke, with two boilers, of 4 and 6 tons and vertical cage, all in complete repair—the boilers and some other parts nearly new.

1 8-inch DITTO, 4 ft. stroke, with one boiler, of 5 tons, and horizontal cage, complete.

Several TONS of straight and turned STEAM-PIPS.

12-head CAST-IRON STAMPS AXLES, with bearings, oak frames, &c., complete.

A powerful WEIGHING MACHINE, nearly new, comprising every requisite.

An immense number of PUMPS, matching-pieces and windbores, 12 to 17-inch bore, with working barrels, doorpieces, H-pieces, cases, with stuffing-boxes and glands to match, from 11 to 19 inches bore, and plunger-poles, from 13 to 19 diameter. Paggrodded rod and cap plates, 6, 7, and 8 inches wide, staples and glands, over-runners, copy saddles, troughs and gudgeons for balance and other bobs.

**TO CAPITALISTS.**—An opportunity, which rarely occurs, now OFFERS for the INVESTMENT of a MODERATE SUM in a rich TIN MINE, on DARTMOOR, in the county of Devon, known by the name of EAST BIRCH TOR.

Many thousand pounds' worth of tin have already been sold from this mine; the lodes have been extended on, and tributers are now at work. It is desirable, from the rich course of tin gone down, to sink to deeper levels; it has, therefore, been determined to augment the capital, by an issue of new shares, which are now in course of appropriation.

A box of specimens has just arrived from the mine, and any party calling at the office, No. 1, Cuthall Chambers, Cophall-court, Throgmorton-street, City, can see the same, and where all particulars may also be obtained.

Application for the remaining shares must be made on or before the 25th inst. London, March 16, 1848.

**SOUTH WALES.—TO BE SOLD, in LLANDILO TALY-**  
BONT parish, near SWANSEA, the FREEHOLD FARMS, called PENGELLY-DRRAIN TYRBAUGH and BRYNLWYD, containing 75 acres, more or less, together with the valuable VEINS of COAL, IRONSTONE, and other MINERALS. The coal is of excellent quality for steam-packet purposes, and is partly intermixed with the property now worked by the Cameron's Coalbrook Steam-Coal Company. A considerable portion of the coal under this property may be won at a very small cost.

For particulars apply to Mr. Hiram Williams, No. 61, Moorgate-street, London.

**FOURDRINER'S PATENT SAFETY APPARATUS, for**  
THE PREVENTING ACCIDENTS IN MINES AND OTHER PLACES, WHEN THE ROPE OR CHAIN BREAKS.

By the ADOPTION of this INVENTION the LIVES of the WORKING MINERS may be PRESERVED, and the PROPERTY of the MINE OWNERS PROTECTED from the serious consequences of either of the following accidents—viz.:

1. From the men, or the load, being precipitated to the bottom of the shaft when the rope or chain breaks: in this case the apparatus is self-acting.

2. From either the men, or load, being drawn over the pulley: in this case, also, the apparatus is self-acting.

3. From the fearful consequences to men or load of a "whirl," or run: in this case the result is equally certain.

A COAL PIT, with the SAFETY APPARATUS ATTACHED to the CAGE, is daily at WORK near BURSLEM, in the STAFFORDSHIRE POTTERIES.

To inspect the apparatus, or to obtain any further information, application may be made to Mr. Edward N. Fourdriner (the patentee), Cheddleton, near Leek, Staffordshire; or to Mr. Joseph Fourdriner, 68, Arlington-street, Camden Town, London—who are prepared to GRANT LICENSES for the USE of the PATENT.

**STRONG MIXING PIG-IRON.—The YSTALYFERA**  
IRON COMPANY beg to solicit ORDERS for their ANTHRACITE PIG-IRON. This iron mixes well with Scotch pig—imparting to it strength and elasticity, and receiving from it a portion of its softness and fluidity. No. 3 pig is recommended for mixing with soft iron—Nos. 1 and 2, for machinery castings, requiring great soundness and strength.

At this period, when cast-iron is so much employed in the construction of bridges and other buildings, requiring all the strength and elasticity which the best mixture of metal will afford, it may be interesting to call attention to the characteristics of ANTHRACITE PIG-IRON, as ascertained on by that great practical authority, the late DAVID MUIRHEAD, Esq., M.I.C.E.:

"It greatly exceeds, in strength, in defective powers, and capacity to resist impact, any iron at this time manufactured in the United Kingdom."

"It now only remains for me to mention a property peculiar to this iron, which was noticed at the time I made the trial experiments, four years ago, but which has been more fully developed in those more recently made. The property referred to is one of great springiness, or elasticity, which communicates a tendency to the bar, in deflecting and breaking, to resume its rectangular form. Bars that had obtained a permanent set of 2-10ths, when afterwards broken, presented but a slight deviation from a right line; and in no case did the curvature exceed one-fourth of a tenth."

"It was also remarked, that most of the fractures, in breaking, presented a regularity of grain throughout, resembling the structure of unhardened steel."

Address THE YSTALYFERA IRON COMPANY, Near NEATH, SOUTH WALES.

Dated June 22, 1847.

**HOT-BLAST WITHOUT COAL, LABOUR, or REPAIRS.**  
DIXON AND BUDD'S PATENTS.

Apply for particulars, or to inspect the process in operation on six blast-furnaces, to J. Palmer Budd, Esq., Ystalyfera Iron-Works, near Neath.

Dated June 22, 1847.

**STEAM TO INDIA AND CHINA, via EGYPT.—Regular**  
MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY.

BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th; and from Suez on or about the 10th of every month.

For rates of passage-money, plans of the steamers, and to secure passages, apply at the company's offices, 51, St. Mary Axe, London.

**CALDWALL'S PATENT SELF-FLEETING WINDLASS,**  
CAPSTAN, AND RIDING BITS COMPANY.

OFFICES.—No. 73, KING WILLIAM-STREET, LONDON.

The patronage of the Lords of the Admiralty and the Hon. Trinity Board, together with testimonials of several of the most practical, scientific, and influential nautical men in the kingdom, having guaranteed the importance to the maritime world of the above-mentioned invention, it is now proposed to carry out the manufacture of the several patented articles—WINDLASSES, CAPSTANS, RIDING BITS, &c., by means of a capital of £100,000, to be raised in 5000 shares, of £20 each, and to be conducted by a company, to be formed for the purpose.

The above inventions, in addition to their superiority over the old windlass, capstan, &c., have the recommendation of greater economy, as they can be supplied at a less price—affording a very handsome profit, and, consequently, a large return to shareholders.

Models may be seen in operation—prospects obtained, and every information given, by application at the office, 73, King William-street, City, from Eleven till Four daily, and orders are received there and at the manufactory, Bell Wharf, Shadwell.

**LAMBERT'S PATENT FLEXIBLE DIAPHRAGM**  
WATER VALVES, or TAPS.—A certain PREVENTATIVE OF LEAKAGE, superseding the use of the metal plug-valve, which is so continually out of order. They are more durable, less expensive, and being nearly frictionless, are opened and closed with perfect ease. They have been tested under various pressures, and have given the greatest satisfaction.—MANUFACTURED ONLY by the Patentees.

THOMAS LAMBERT & SON, Brass and Cook Founders, 30, New-cut, Blackfriars-road.

**PATENT ALKALI COMPANY'S IRON PAINT.**—This PAINT, now first offered to the public, is the PRODUCT of a PATENT PROCESS, and possesses VALUABLE and PECULIAR QUALITIES, not otherwise attainable.

Its colour is a purple-brown—it is perfectly innocuous—is far more durable than lead paint, and two coats are fully equal to three of any other paint. A single coat will be sufficient to demonstrate this. Its durability is very great.

From its chemical composition, it is especially, and above all other paints, adapted to covering iron; also wood, and stucco, or brick walls. The peculiar oxidation of the base of this paint makes it impossible that further change should take place in its composition. Its identity with iron secures it from galvanic action, so injurious to the durability of lead paints on iron work. It has been exposed on shipping to the action of sea-water, and the sulphuretted hydrogen so prevalent in sea-ports and tidal harbours, for three years, without change.

Its cheapness and strength render it admirably adapted for iron railings, farm buildings, and shipping. It will also cover crooked timber. Price, by the ton, £20, delivered in London. All orders to be addressed to the offices of the company, 20, Fenchurch-street, London; where testimonials may be seen as to the value of the paint.

EVANS, BROTHERS, Agents.

**FALL OF SEVEN RAILWAY ARCHES at MANCHESTER,**  
and the RECENT ACCIDENT at EUSTON-SQUARE.—The METALLIC SAND, or ENGLISH POZZOLANA, after many years' trial, has been found an invaluable article in the CONSTRUCTION of RAILWAY TUNNELS, SEWERS, and ALL UNDERGROUND WORKS, requiring great strength and density. It is admixtured with Lime or Roman Cement, from its chemical properties, it forms a Mortar, or Concrete, of flint hardness, and almost entire incompressibility; and, from its adhesive and impervious qualities, it completely and for ever excludes water. The more it is exposed to the atmosphere, and to wet and damp, the harder and more durable it becomes: it has been EXTENSIVELY used in the great tunnels on the London and Birmingham Railway; in the foundations of the New Houses of Parliament; sea walls on the South Devon Railway; Clifton reservoirs, and other important works.

For further particulars, apply to Mr. C. K. DYER, 4, New Broad-street, London.

Analysis of the Metallic Sand.

Silica..... 49.—Iron..... 32.—Alumina, lime, &c..... 19.

**NATIONAL DEFENCES.** By WILLIAM MALINS.—A PLAN, submitted for the consideration of Government, whereby any required force, of the heaviest Artillery and Troops, may be concentrated at the point of danger, so as to arrest a hostile Fleet under the Fire of Movable Batteries, traversing on a Railroad at High-water line of Coast, where assailable. The Electric Telegraph, carried along the same line, would convey notice of the approach of an enemy. From the Harbours of Refuge, Black-ships and Steamers might quickly arrive to attack the enemy in flank and rear; and thus between two fires destroy him.

Published by J. Ridgway, Piccadilly; E. Wilson, Royal Exchange.—Price 1s.

**PORCELAIN CLAY, BLACK LEAD, FELSPAR, and**  
FIRE-CLAY, may be OBTAINED, in any quantity, from Dr. WALT, PASSAU, in BAVARIA.

**BLAENGWAWR STEAM COAL, CARDIFF.**—placed on the List of Coals supplied, by Contract, to the Government.—ORDERS for the BLAENGWAWR STEAM COAL RECEIVED by Mr. W. F. STANTON, No. 9, LOVE-LANE, EASTCHEAP; or by Mr. George Sully, agent, 1, Bute-street, Cardiff, Glamorganshire, South Wales.

**CONTRACT FOR 18-inch IRON PIPES.—TO IRON-**  
MASTERS, FOUNDERS, and OTHERS.—The directors of the COMMERCIAL GAS COMPANY will MEET at the company's offices, on Friday, the 31st inst., to RECEIVE TENDERS for 18-inch pipes—siphons, bends, and branches. Specification and printed forms of tender can be had on application being made at the secretary's office.

The directors do not pledge themselves to accept the lowest tender.  
By order of the board, G. J. JAMES, Secretary.

Commercial Gas Company's Office, Stepney, London, March 18, 1848.

**FOR SALE, BY PRIVATE CONTRACT, a NEARLY NEW**  
ENGINE, on the combined principle of Messrs. Harvey and Co., from the drawings of Mr. W. West, with 60 and 32-inch cylinders—equal to 141-horse power.

Apply to Mr. P. N. Johnson, 79, Hatton-garden, London.

**FOR SALE, BY PRIVATE CONTRACT.—A single-acting**  
PUMPING-ENGINE—cylinder 30-inch diameter, 9-foot stroke, equal beam, with 7-ton boiler, casters, spring beam, and first set of rod-shafts attached, being the engine of Wheel St. Cleer.—For particulars, apply to Capt. Osborne, Lickard, Mr. West, engineer, St. Blazey; or Mr. Rendle, the purser, 13, Octagon, Plymouth.

**FOR SALE.—A THIRD PART in one of the most promising**  
MINES in WALES—situated within a mile of water-carriage, and advantageously located for the working by water-power. The lode has been partially worked, yielding large returns of lead ore, and are laid open to a great extent—presenting the most favourable appearances, with large quantities of barytes, from which immediate returns may be made.—For price and particulars, address "X," care of Mr. Ward, accountant, No. 26, Nicholas-lane, City.

**WILLIAM W. TAYLOR & CO., MINERAL SURVEYORS,**  
MINING SHAREBROKERS, &c.,  
No. 2, ROYAL EXCHANGE-BUILDINGS, LONDON.

**MR. JAMES STRIDE, PARLIAMENTARY AGENT,**  
begs to announce, that he has COMMENCED BUSINESS as MINING, SHARE, ESTATE, and GENERAL AGENT. He has ON SALE, SHARES in the best DIVIDEND-PAYING and OTHER MINES. The earliest and most authentic information, and the full benefit of the market value, afforded to buyers and sellers of mining and other property. MINES INSPECTED and REPORTED ON.

London, 35, Charing-cross.

**MR. R. TREDINNICK, THREE KING'S COURT,**  
Lombard-street, LONDON.

Continues to DEAL in every description of MINING, RAILWAY, BANKING, INSURANCE, CANAL, and OTHER SHARES.—Statistical information afforded gratuitously, upon personal application.—MONEY ADVANCED upon the above securities.

**JAMES LANE, MINING SHARE DEALER,**  
75, OLD BROAD-STREET, LONDON.

**WILSON & FRASER, 2, WELLINGTON-BUILDINGS,**  
LIVERPOOL, and 13, EXCHANGE-PLACE, GLASGOW, have always ON SALE PIG-IRON, BAR-IRON, RAILWAY CHAIRS, and RAILWAY BARS.

**BRITISH MINING OFFICES.—NOTICE.**—The BUSINESS of these OFFICES will henceforth BE CONDUCTED at No. 25, FLEET-STREET, LONDON, and No. 4, STAMP-OFFICE BUILDINGS, MANCHESTER; to either of which offices communications are requested to be addressed. The correspondence and reports, with the accounts, of the respective companies may be inspected at all times, on application.

British Mining Offices, Feb. 17, 1848.

**MONEY.—MESSRS. KILLICK & CO. (late WINSTANLEY,**  
KILLICK, & Co.), SHAREBROKERS, inform their friends and the public, they make IMMEDIATE ADVANCES, to any amount, on the deposit of English and Foreign Railway Shares, Scrip, and Debentures, upon exceedingly advantageous terms; they also BUY and SELL every description of STOCK and MINING SHARES, at much less commission than usually charged.

6, Bank Chambers, opposite the Bank of England.

**ANTIMONY AND SILVER-LEAD MINING AND**  
SMELTING COMPANY.  
1000 shares, of £5 each.

NOW AT WORK ON THE COST-BOOK PRINCIPLE.  
For PROSPECTUSES, and further particulars, apply to Mr. Bartlett, No. 59, Lombard-street, London.

**BEDFORD UNITED MINES.—DECLARATION OF**  
DIVIDEND.—Notice is hereby given, that a DIVIDEND of FIVE SHILLINGS per share will be PAYABLE at this office on Friday, the 31st of March inst., and every succeeding Friday, between the hours of Eleven and Three o'clock.

The scrip certificates, on which the dividend is claimed, must be left at the office two clear days before the payment can be made (for which an acknowledgment will be given, certifying the number of shares deposited), that the same may be cancelled and registered in the Cost-book; the party depositing the scrip certificates will be required to sign the Cost-book, agreeably to the resolutions passed at the general meeting, held on the 9th Dec. last.

By order of the meeting of shareholders, held this day, 50, Threadneedle-street, March 23, 1848.

**COPIAPO MINING COMPANY.—Notice is hereby given,**  
that the HALF-YEARLY MEETING of the shareholders in this company will be HELD at their office, No. 22, Austin-friars, on Thursday, the 30th inst., at One o'clock precisely.

By order of the directors, FREDK. GRELLER, Secretary.

22, Austin-friars, March 16, 1848.

**DARTMOOR CONSOLS TIN MINING COMPANY.**  
A SPECIAL GENERAL MEETING will be HELD at the White Hart Inn, Coggeshall, Essex, by order of the committee of management, on Monday, the 3d day of April next, at Two o'clock in the afternoon, for the purpose of confirming the resolutions of a meeting, held on the 21st February last, for abandoning the mine, and to dissolve the company.—Coggeshall, Feb. 22, 1848.

W. BEARD, Secretary.

**KINZIGHTAL MINING ASSOCIATION.—The FIRST**  
GENERAL ANNUAL MEETING of this association will be HELD at the office of the company, 1, Adelaide-place, London-bridge, on the 30th of April, at One o'clock precisely.

March 22, 1848.

**MENDIP HILLS MINES.—At a Special General Meeting of**  
shareholders, held at the office of the company, 44, Finsbury-square, on Friday, the 24th March inst., it was

Resolved.—That the reports and accounts, now read, be received, adopted, and entered in the cost and transfer-book of this company.—Carried unanimously.

Resolved.—That the thanks of the shareholders be presented to the chairman, for his polite and able conduct in presiding over the business of this meeting; and that the thanks of the meeting be also presented to the directors, for their able management of, and careful attention to, the affairs of this company, and the interests of the shareholders.—Carried unanimously.

Resolved.—That a special vote of thanks be presented to P. N. Johnson, Esq., for his invaluable services and attention to this company's business.—Carried unanimously.

**TAMAR SILVER-LEAD MINING COMPANY.**  
(SMELTING DEPARTMENT.)

Notice is hereby given, that a THIRD PAYMENT of TWENTY-FIVE PER CENT. of the subscribed CAPITAL of this company, and a THIRD PAYMENT of TWENTY-FIVE PER CENT. of the BONUS, will be made on Wednesday, the 29th inst., and following Wednesdays, between the hours of Twelve and Four.

The interest of 5 per cent. on the above 25 per cent. subscribed capital, will cease on the 29 inst.—The debentures must be left at the office of the company three clear days, to be examined and marked.

44, Finsbury-square, London, March 16, 1848.

**TRELEIGH CONSOLIDATED MINING COMPANY.**  
The directors hereby give Notice, that a MEETING of the shareholders will be HELD at the office, on Monday, the 3d of April next, at One o'clock precisely, when the accounts, for three months, ending the 31st March, will be laid before them.

57, Old Broad-street, March 13, 1848.

**ADCOCK'S PATENT SPRAY PUMP.**—This important INVENTION having been PERFECTED, and brought into SUCCESSFUL PRACTICAL OPERATION, the PATENTEE is ready to RECEIVE, and to execute ORDERS.—Apply to Henry Adcock, C.E., at his office, No. 3, Moorgate-street, London, where pamphlets, descriptive of the invention, may be had; at the office of the Mining Journal, 59, Fleet-street; and through any respectable bookseller.—price 6d.



**CHLOROFORM IN MANUFACTURES.**—The powerful solvent capabilities of chloroform are now, by experiment, fully established. Caoutchouc, resin, copal and gum-lac, bromine, iodine, the essential oils, &c., yield to its solvent power. This property may, it is believed, prove extensively of advantage in many of the fine and useful arts.—*Pharmaceutical Times.*

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**THE COAL TRADE IN THE OLDEN TIME.**—At a recent meeting of the Archaeological Institute, Mr. Hudson Turner read a document of the reign of Edward III., illustrative of the coal trade of that period. It detailed certain expenses for purchases in sea coals for the king's use, by writ of privy seal. They were bought at Wylton, at 1s. 6d. per chaldron—brought to Newcastle in "keels," and by ships to London—the freight to the metropolis being at the rate of 1s. per chaldron.

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**A WONDERFUL CURE OF AN ERUPTION IN THE FACE BY HOLLOWAY'S OINTMENT.**—The editor of the *Guernsey Star* publishes, in his paper of the 26th of Feb., a most extraordinary cure which he witnessed by the use of Holloway's ointment, in the case of a child whose face was entirely covered with scabs. By his recommendation, the parents of the child tried this invaluable remedy; and, in the space of one week, to the astonishment of every one, the face was perfectly healed. This ointment is peculiarly adapted for the cure of burns, scalds, scurvy, and every variety of skin disease; also, for old wounds, scrofula, cancers, bad breasts, and sore legs. Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

## STRENGTH OF MATERIALS FOR RAILWAY BRIDGES.

The president of the Royal Scottish Society of Arts (G. Buchanan, Esq.) at the request of the council, presented an important communication, at their last meeting, entitled—"An Exposition on the Strength of Materials, particularly Cast-Iron and Malleable Iron, and their Application in the Construction of Railway Bridges."

[On this subject, so important at the present time, from the extensive use of these materials in the construction of bridges for railways, and from the new and extraordinary forms and dimensions which they are now beginning to assume, the council of the society had requested their president to make a communication on the present state of our knowledge and practice; and, on reading the first part of his communication, he illustrated his subject by various interesting experiments and models, more particularly a large and beautiful model, with drawings and elevations, of the high level bridge across the Tyne at Newcastle, which, through the liberality of Mr. Robert Stephenson, the engineer of the bridge, he was enabled to exhibit, and to explain the situation, extent, and construction of this great work in all its details.]

Mr. BUCHANAN commenced by stating, that he did not profess to communicate anything original, but would be happy if he could only draw from the stores of information which had of late years been accumulating on this subject, under the hands of very eminent, scientific, and practical men, such leading facts and maxims as might prove a sure guide for our practice; and such truths, when they become known and established on the unerring grounds of experiment and calculation, could not, he thought, be too widely disseminated. The various strains might all be reduced to two kinds, according as the material is either distended or compressed by any force or pressure. From these two all others arise, and either consist or are compounded of them.

The tensile strain is the simplest of all, depending neither on the peculiar form of the materials, nor even on the length, but only on a single element—namely, the section of fracture. This peculiarity of the tensile force was explained and illustrated. In regard to cast-iron, the result of the extensive and interesting experiments of Messrs. Hodgkinson and Fairbairn was given; and it was found from the mean of 16 different trials of English, Welsh, and Scotch iron, both hot and cold blast, that this material will sustain about 7½ tons per square inch before breaking, the weakest specimen being 6, and the strongest 94. The limit of fracture, however, can never be approached with safety, not even within a long distance, seeing that this material is liable to unseen imperfections, and, above all, to snap in a moment, without distending itself, or giving any warning of danger. Malleable iron, again, is much superior in tensile strength, and, by its remarkable ductility, inspires confidence in a still higher degree; bears no less, at an average, by various experiments of Telford and Brown, than 27 tons—the weakest 24, and the strongest 29 tons; but, before the half of this load is applied, it begins to stretch, and continues stretching up to the limit of fracture; it is, therefore, not only three times stronger than cast-iron, but may be safely loaded with five times the breaking weight, or about 8 or 9 tons.

In regard to the strength of compression, this depends also, as long as the length is limited, on the same element—the section of fracture; but when a long rod or slender pillar is loaded or compressed, it is liable to bend, not for want of strength, but for want of stability, the most flexible turning it off its centre, and breaking it by lateral force—deranging entirely the simple law applicable to short lengths. In regard to cast-iron, by far the most satisfactory experiments are those by Hodgkinson and Fairbairn. The mean result gives very nearly 50 tons on the square inch—the weakest 36½ tons, and the strongest 60 tons. It is thus six times stronger in compression than in tension; and hence it is peculiarly recommended for sustaining any superincumbent weight, as in the case of pillars and of bridges, provided the construction is such as to resolve the strain arising from the load into a longitudinal compression. This is often in our power by proper arrangements, chiefly giving a sufficient height and curvature to the arch; but in cases where, for the want of headroom, the arch is unduly flattened, or resolved into a straight beam or girder, the danger is that we bring the tensile force into play, and then the use of cast-iron is objectionable, or, at least, requires extreme caution. No direct experiments have been made on malleable iron of short lengths; but from some facts brought out by Mr. Hodgkinson, its strength appears much inferior to cast-iron, chiefly from ductility, whereby it gives way much sooner under a load. It will bear 27 tons, probably much more, without fracture; but with 12 tons it yields to the load, contracts longitudinally, and swells out laterally; and this is another very important fact for our guidance in the use of these different materials.

In regard to stone, experiments have been generally made on specimens rather too minute. Like cast-iron, the crushing strength is superior to the tensile, and hence its adaptation for buildings, particularly bridges. Craigleith stone will bear 2½ tons on the inch, or upwards of 400 tons on the square foot—Aberdeen granite 600 tons. In regard to bricks, he had occasion to make experiments in relation to the great chimney of the Edinburgh Gas-Works. It became matter of consideration, whether the ordinary brick could withstand the pressure of so lofty a column. Trials were, therefore, made with a powerful hydrostatic press, not on small specimens, but on the actual brick. The ordinary stock brick was found to bear 140 tons on the square foot, and the common fire-brick 157 tons; but the brick of which the chimney is constructed, consisting of a mixture of fire-clay and ironstone, bore, a single brick on its bed, no less than 140 tons, equal to 400 tons on the square foot.

The effect of the transverse strain was then considered, and illustrated by various experiments and models. The strain is a compound of the tensile and compressive strain, the one part of a beam loaded in the middle being compressed, and the other distended, and the beam itself becoming a lever, and acting often with enormous power against its own strength. Hence it became easy to calculate the strength, this being in every case proportional in the first instance to the area of the section of fracture, and this original element, modified by the length and depth of the beam, diminishing in exact proportion to the length, and increasing in proportion to the depth.

The transverse strain acting with such severe advantage against our materials, various methods have been contrived for eluding its effects; and for these none are more remarkable than the principle of the arch, the effect of which was illustrated by experiments, and particularly the necessity in flat arches of having secure abutments to resist the horizontal thrust—and this was frequently accomplished, where there is sufficient headroom, by uniting the extremities of the arch by strong malleable iron rods, in the same manner as in the case of the roof; the feet of the rafters are united and prevented from spreading by the tie beams; and this is the principle, the securest of all, on which the great iron bridge at Newcastle, now in progress, is constructed—the object of which is to cross the river and valley of the Tyne, on the highest level of the railways on each side, so as to unite them in one uninterrupted line from London to Berwick, and unite the termini of the different railways, now separated three-quarters of a mile or more, into one grand central station, a little to the west of the ancient castle. The distance between this station and the present terminus of the York and Newcastle Railway is 3457 feet, consisting chiefly of the space occupied by the bed of the River Tyne, and the steep bank on each side, well known to travellers in descending from Gateshead Fell on the south, and Dean-street on the north, both to be now superseded by the smooth and level surface of the railway, and by a turnpike road running on the same bridge directly under the line of rails. The steep banks on each side are spanned by stone arches of a very substantial character, the river and low banks by six metallic arches, all of the same dimensions and structure, resting on solid piers and lofty columns of masonry. In the bed of the river the piers are laid on very solid foundations of piles and planking, with concrete—many of the piles 40 ft. in length, and driven to this depth through hard gravel and sand, till they reach a bed of freestone rock. Nasmyth's celebrated pile-driver is in full operation here, and with wonderful effect, and has come most opportunely in aid of the work; driving night and day, at the rate of 60 or 70 strokes a minute, the pile heads often being set on fire by the rapidity and violence of the blows of the ram. Piers laid 2 ft. below water mark, and raised about 100 feet to the springing of the arches. The arches consist each of four main ribs of cast-iron, each in five segments, bolted together, and forming one entire arch, 125 feet span, and rising 17 ft. 6 in. in the centre, and the level of the rails on the upper platform 108½ feet above the level of high-water mark of the Tyne. Depth of the rib, 8 ft. 9 in. at the springing, and 8 ft. 6 in. at the crown, with flanges 12 in. broad, external ribs 2 in. thickness of metal, internal ribs 3 in. Total sectional area at the crown 644 square inches, which would bear with safety a load of 5000 or 6000 tons, and would form, with proper abutments, a strong arch in itself; but for the fullest security, and to prevent the possibility of inconvenience of risk from deflection or vibration, or otherwise, each rib is united at the springing by strong malleable iron bars, or ties, 7 in. broad and 1 in. deep, of the best scrap iron, and in all 24 in number. The railway is supported above the arch, and the roadway suspended from beneath, by hollow cast-iron pillars 10 ft. apart, and each 14 in. square, through which are passed strong malleable iron circular bars, binding the whole into one stiff and solid mass. The sectional area of the horizontal bars is 156 square inches, which would sustain upwards of 4000 tons without breaking, and 1500 tons with perfect safety, but the whole weight of the bridge will not exceed 700 tons, leaving 800 tons of surplus strength. The railway, which is at the summit level, runs on a level 4 ft. above the crown of the arched rib, and is supported in the middle by hollow cast-iron trough girders resting on the top of the pillars 10 ft. apart, and united by longitudinal timbers laid with strong planking. The roadway runs nearly on a level with the malleable iron ties, leaving a space of about 20 feet clear headroom. In the whole of the work the utmost pains have been bestowed on materials and workmanship, and in making everything complete, the surfaces, which abut together, being regularly planed or turned, as in machinery; and, from all the arrangements, the most successful results may be anticipated from this bridge. The cost of the ironwork and roadway, by the estimates, comes to 112,000l., and the contracts for the bridge and viaducts to above 300,000l.

—*Scottish Railway Gazette.*

**IMPORTANT AMERICAN INVENTION.**—The town of Birmingham, in Connecticut, possesses some extensive works, where copper is melted from the pig into ingots, rolled into bars and sheets, and drawn into wire of all sorts and sizes. It has cut-nail and shoe-tack factories, a broad-cloth manufactory (from American wool), a manufactory of patent machinery for the adjustment, extension, &c., of fractured limbs, whereby difficulty in dressing is avoided, pain obviated, and all danger of after-lameness from contraction precluded—a signal triumph of Yankee inventive skill, though not more ingenious than a brass chain fabricator in the wire-drawing shops, which does its work with wonderful accuracy. At every turn of the driving-wheel, the wire unwinding from the reel, or cylinder, is pulled forward to the proper position, the end running through the last formed link, exactly the length for two links cut off, first one end turned over into a link, then the other—the former dropping down through the machine, leaving the latter projecting above—so that the wire can be instantly pushed through it, when it is cut off, two more links formed, and so on, until a large roll of wire is transformed into a perfectly formed chain, by the unaided operation of machinery, hardly a finger having been lifted during the process. When the principle is applied to iron and steel wire, it will ensure a fortune to the patentee.—The great feature of Birmingham, however, is its pin-making. The works of the Howe Company here employ 200 persons. A dozen years ago all the pins used in this country were imported; now, none are, except a few German pins, for the German population of Pennsylvania.—One more invention, on the importance of which much stress is laid, I will attempt to describe; it is an invention for cutting files by machinery: in England it is done with a hammer and chisel, producing from one to a dozen files per day. This bids fair to produce a new era in the manufacture of files; and, if not introduced into Europe, will make files an article of export from that country. The machine is about 5 ft. long, 2 ft. wide, and 3 ft. high, and can be worked as easily as the turning of a common grindstone. The blank intended to be made a file is placed in a central position, the chisel strikes both sides of the blank at the same time, making, in common speed, between 200 and 300 cuts per minute. The gearing is so adjusted that the chisels accommodate themselves to the thickness of the file, so that the cut is equal in depth throughout; and the regular progression of the file ensures perfect regularity in the distance of the cuts. A 10-in. file, of medium fineness, is cut on both sides in 3 min.; in 3 min. more the traverse cuts are made, and it is again passed through to cut the sides. Thus, three machines, which will not cost more than \$300 each, and can be tended by one man, can complete 20 common files in an hour, or 200 in a day. A steam-engine of 5 horse power can put 50 of these machines in operation.

**IMPORTANT RAILWAY TRIAL.**—In the High Court of Justiciary, Edinburgh, last week, H. H. McLure, C.E., Dumfries, lately the resident engineer on the Dundee and Perth Railway; George Simmie, inspector; and Richard Baird, superintendent of passenger traffic on that line, were placed at the bar on a charge of culpable homicide, and of careless and culpable neglect of duty. McLure's indictment bore that he had given orders for the construction of a skew-bridge at Pilmor, Perthshire, at a curved part of the line, and thereby departed from the contract plan. The chairs of the rails were also said to be insecurely fastened—only one of the two spikes penetrating the bearing beams, the other projecting merely through the planking. The charges against the other two gentlemen, were for not having observed the insufficiency of the works of the bridge, and for authorising the sending the engine (one of Stephenson's patent) along the line with a train unsuited to the curvature at the point, and for giving directions for passing the curves at too rapid a speed—the consequence being, that the engine started a rail on the bridge, and run off the line with several carriages, into an adjacent field, killing one individual, and seriously injuring several others. The trial occupied all Wednesday and Thursday, and excited considerable interest. The evidence for the prosecution occupied all the first day of the trial; and, among the witnesses examined, were Lord Kinnaird, Mr. D. Stevenson, C.E., Mr. Barry (inspector) and Mr. Lamsar (resident engineer) of the Dundee and Perth line. The Lord Advocate and the Advocate-Depute conducted the prosecution; and the Dean of Faculty, Mr. Moncrieff, Mr. Inglis, and other eminent counsel, conducted the defence. Several engineers, &c., were examined at length on Thursday, on behalf of the defendants, among whom were Mr. Barclay (assistant to Mr. R. Stephenson), Mr. Cabrey (superintendent on the North Midland), Messrs. Bell and Thornton (of the North British), &c. Mr. Miller, engineer, in his evidence, stated, that he did not consider a curve with a radius of less than half a mile as dangerous; that on such curves the engine went steadier; and that they were considered safer by engine-drivers than a straight line; and, moreover, they were generally traversed at the same speed as other parts of the line. The Lord Advocate stated, that the information laid before him, rendered it necessary to bring the gentlemen to trial; but he was glad to say, that the evidence had completely exculpated Mr. Simmie, neither did he think Mr. Baird criminally responsible; but Mr. McLure's case was more serious, and it was with reluctance, that in withdrawing the charges against the two former gentlemen, he also departed from that against him. The Lord Chief Justice Clerk concurred with Mr. Rutherford, and considered Mr. McLure ought to congratulate himself on the course to be pursued; for he conceived, if the charge had been proved, he would have been criminally responsible for the result. He considered the trial was of the utmost importance, as showing the gross inattention that was paid to those precautions which were necessary for the public safety. The first duty of an engineer, was to look beyond either the interest of his employer, or the nice calculation of what would, and what would not, do in point of strength. He hoped such prosecutions as these would result in increased care in the formation of railways. The accused were then dismissed.

**FRENCH RAILROADS.**—A report was current in Paris, on Wednesday, which has given firmness to some of the lines of railway. It is said that the Government is determined to take possession of all the railways, and so make an equitable arrangement with the shareholders. A deputation, consisting of the directors of several railways, and among others, of the Paris and Lyons, had, yesterday, an interview with the Minister of Finance on the subject. The report is, that the Government will take all the lines out of the hands of the shareholders at par, and pay for them in 5 per cent. stock at par. As it is well known that the late Government, as well as the present, was very anxious to get the lines into their own hands, it is exceedingly likely that this, or some similar plan, will be adopted. The directors of several lines are beginning to find their employees exceedingly troublesome. On the Rouen line, the engine-drivers refuse to work more than 15 days per month; and, besides this, they ask for the selection of those to be employed under them, and an increase of wages. On other lines, similar symptoms of insubordination show themselves, and threats have been used to enforce the claims, which have greatly alarmed the directors. It is probable that, in a day or two, the Government will make known its determination on this important subject.—*Chronicle.*

**CHANGES MADE BY THE PROVISIONAL GOVERNMENT OF FRANCE IN THE INSPECTION OF RAILWAYS.**—A decree of the Minister of Public Works, of the 21st inst., makes the following changes in the general supervision of railways: Art. 1. The royal commissions to railway companies are suppressed.—Art. 2. The surveillance of the commercial working of railways, and the financial operations of companies shall be confided to agents, who shall take the title of *Inspecteurs de l'exploitation commerciale*. The inspectors shall be of two classes—*Inspecteurs principaux* and *Inspecteurs particuliers*. The remaining articles of the decree place the last-named officers subordinate to the first, and divide the railways of the Republic into six *arrondissements*.

**POWER AND SPEED OF THE LOCOMOTIVE.**—The ordinary morning express train of Saturday, from the Paddington terminus, made, for 53 miles, the most rapid trip that has yet been performed by the locomotive. During the experiments that were made with the broad gauge 8-wheel engines some months since, the shortest time in which the 53 miles from Paddington to Didcot were run over was 58 min. 34 sec. On Saturday, the *Lightning*, 8-wheel engine, with 8-ft. driving-wheels, and driven by William Cowell, a careful and experienced man, left Paddington at 54 min. 6 sec. past 10 o'clock, and came to a dead stop at the Didcot station at 45 min. 44 sec. after 11 o'clock; performing the 53 miles, therefore, in 51 min. 38 sec.—that is, from a state of rest to a state of rest. The writer rode the whole of the distance on the engine, which was perfectly steady at the highest velocity—viz., between 75 and 76 miles per hour. Of the 53 miles, 50 were performed at the average velocity of between 67 and 68 miles per hour. The weight was 50 tons. We witnessed another excellent performance on our return journey by the 10-15 train from Swindon. The train, which consisted of 15 carriages, luggage-vans, horse-boxes, and carriage-trucks, weighing about 115 tons, left Swindon at 35 min. past 12 o'clock (20 min. late). The engine attached to the train was an old one, called the *Pollex*, with 7-ft. driving-wheels, 16-in. cylinder, and 20-in. stroke. The train made six stoppages, losing nearly 17 min. at three of them, and did the entire distance (77 miles) in 2 hours 26 min., or upwards of 30 miles an hour, including the stoppages—an extraordinary performance, considering the class of engine to which the *Pollex* belongs, and the weight of the train. The engine, in this case, was driven by F. Kirkham, one of the best drivers in this country.—*Herald.*

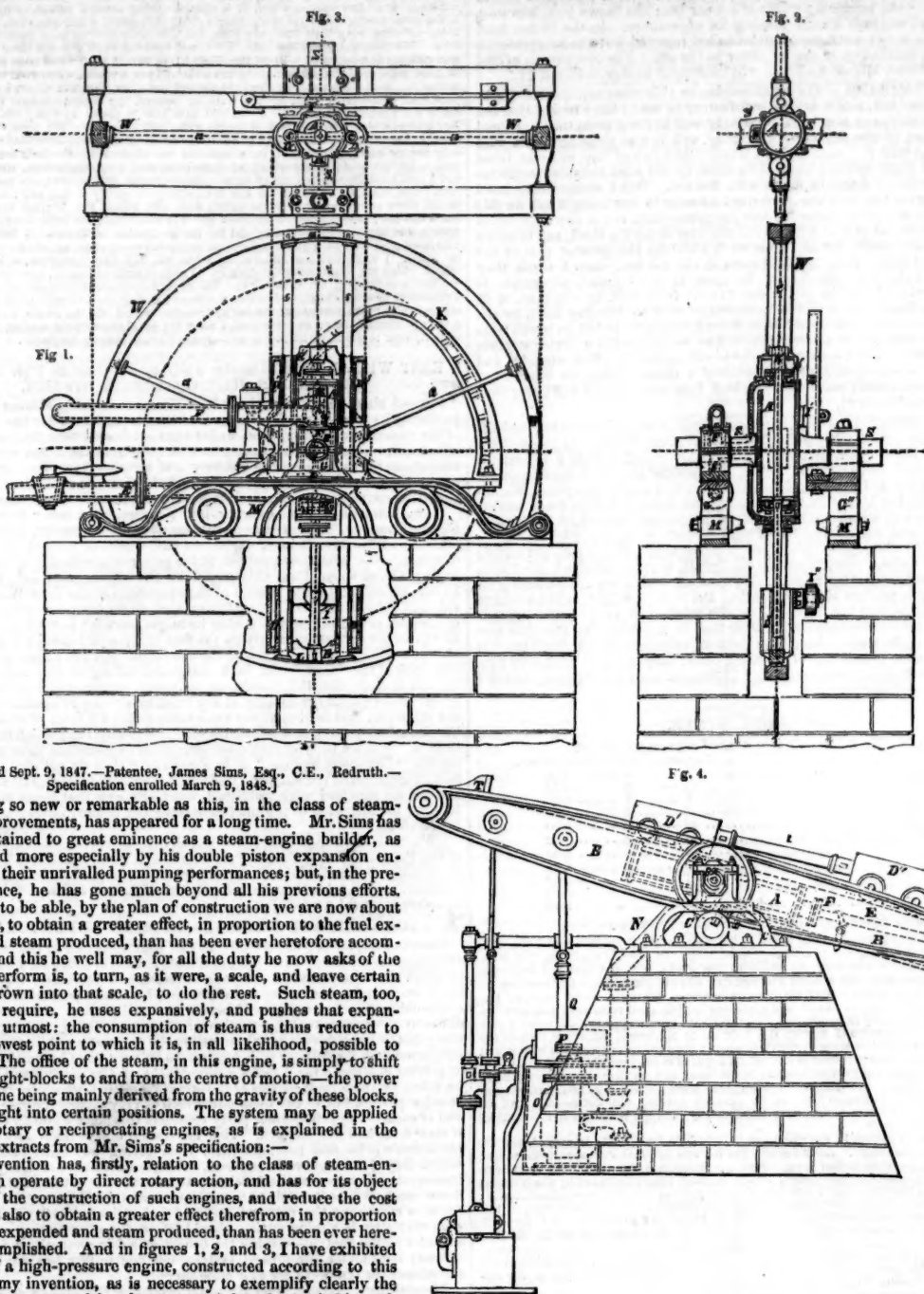
**CALEDONIAN RAILWAY.**—We understand the damages done to this line, engine, carriages, &c., by the late accident, amount to more than 2000l. The inquiry on the two unfortunate sufferers—Mrs. Warwick and John Kinder—has resulted in a verdict of "Accidental Death," with a recommendation, however, from the jury, that the company should see that their servants were more strict in the discharge of their duties.

**EDINBURGH AND GLASGOW RAILWAY.**—On Friday, the new iron rope, for taking the trains up the tunnel, came into operation, and is found a great improvement. It takes the trains up in about half the time, and there is now no smoke, or steam, to pollute the air. The locomotive that drags the train goes up at the same time; but it does not use its power till at the head of the incline.

**SCOTTISH CENTRAL RAILWAY.**—We believe that Viscount Duncan has been unanimously elected chairman of the directors of this company, vice the Marquis of Breadalbane, and Mr. Bruce, of Kennet, vice-chairman, in room of Major Moray Stirling, of Abercainry.



## SIMS'S NEW STEAM-ENGINE.



[Patent dated Sept. 9, 1847.—Patentee, James Sims, Esq., C.E., Redruth.—Specification enrolled March 9, 1848.]

Nothing so new or remarkable as this, in the class of steam-engine improvements, has appeared for a long time. Mr. Sims has already attained to great eminence as a steam-engine builder, as is witnessed more especially by his double piston expansion engines, and their unrivalled pumping performances; but, in the present instance, he has gone much beyond all his previous efforts. He claims to be able, by the plan of construction we are now about to describe, to obtain a greater effect, in proportion to the fuel expended and steam produced, than has been ever heretofore accomplished; and this he will may, for all the duty he now asks of the steam to perform is, to turn, as it were, a scale, and leave certain weights thrown into that scale, to do the rest. Such steam, too, as he does require, he uses expansively, and pushes that expansion to the utmost: the consumption of steam is thus reduced to the very lowest point to which it is, in all likelihood, possible to carry it. The office of the steam, in this engine, is simply to shift certain weight-blocks to and from the centre of motion—the power of the engine being mainly derived from the gravity of these blocks, when brought into certain positions. The system may be applied either to rotary or reciprocating engines, as is explained in the following extracts from Mr. Sims's specification:—

"My invention has, firstly, relation to the class of steam-engines which operate by direct rotary action, and has for its object to simplify the construction of such engines, and reduce the cost thereof; as also to obtain a greater effect therefrom, in proportion to the fuel expended and steam produced, than has been ever heretofore accomplished. And in figures 1, 2, and 3, I have exhibited so much of a high-pressure engine, constructed according to this branch of my invention, as is necessary to exemplify clearly the nature of the same, and in what manner it is to be carried into effect; fig. 1, being a side elevation of the parts shown; fig. 2, transverse section on the line *a, b*, of fig. 1; and fig. 3, a plan. *A*, is a steam cylinder, which is mounted in the centre of a fly-wheel *W*; *S*, the shaft of this wheel is in two parts, cast upon, or otherwise attached to, two opposite sides of the cylinder, *A*, while the spokes, or arms, *a a a a* and *c c c c*, radiate from brackets, or snugs, *B B*, cast upon or otherwise attached to the two other sides of the cylinder, *A*. *P* is a piston, which fits the cylinder in the same way as in ordinary steam-engines, but has two arms, or rods, one on each side of the piston, which work alternately through stuffing-boxes, at the opposite ends of the cylinder. *R' R'* are cross-heads, which are attached to the extreme ends of the piston-rods, and slide upon and are guided by two of the arms, *c c c c*, of the wheel, which are placed for the purpose parallel to one another, and at equal distances from the cylinder. *D' D'* are weight-blocks, which are attached to the cross-heads, *R' R'*, and provided with guide-rollers, *I' I'*, which take alternately into the parabolic guide-plate, *K*. *H* is a steam-pipe, or passage, cast on the cylinder, and communicating with it at top and bottom. The shaft, *S*, before mentioned, is cast hollow, and divided longitudinally into two separate passages, *x, y*—one of which leads to the upper, and the other to the lower end of the cylinder, through the passage, *H*. *E* is the induction port, and *F* the eduction port, which are formed of two longitudinal slots, or openings, made in the journal of the shaft, *S*, which rests on two pedestals, or pillow-blocks, *G' G'*, raised on the basement, *M*, for the support of the engine. The mode of setting the engine to work is as follows:—Supposing the engine to be at rest, and the valve, or cock, which commands the induction port, *E*, to be opened (the eduction port being, at the same time, left open to the exhaust-pipe), the steam immediately rushes beneath the piston, and presses it upwards, carrying with it, through the medium of the piston-rods and cross-heads, the weight-blocks, *D' D'*. But, as soon as the guide-roller, *I'*, attached to the weight-block, at the extreme end of the upper piston-rod, comes into contact with the parabolic guide-plate, *K*, it not only deflects the piston in the direction of that plate, but throws over the upper weight-block from the centre of the wheel into a line coincident with the pressure of the piston, and simultaneously therewith brings the under weight-block up to the centre. As the piston completes its stroke, the upper weight-block, *D*, is thrown out to the extreme length of its range, and then serves, by its gravity, combined with the impetus derived from the preceding stroke of the steam-piston, to carry round the wheel through the remaining half of one revolution (as represented in fig. 1), by which time the cylinder is in a position to receive a second charge of steam, when the same operation is repeated, as before, and the entire revolution completed; and so on for any number of revolutions, as long as the engine is supplied with steam. The weight-blocks, it will be observed, are prevented by the guide-plate from being thrown out, so far as to come in contact with the periphery of the wheel; but that guide-plate is not absolutely required, except where the engine is worked with variable loads, and it may be safely dispensed with wherever the engine has one steady and uniform duty to perform; and, in the latter case, it will be proper to attach to the inside of the periphery of the wheel, between the arms, *c c c c*, two paddings, or buffers, *L L*, of vulcanised caoutchouc, or of gutta percha, to protect the periphery from any accidental concussion of the blocks against it. The weight-blocks must always bear a due proportion to the mean power of the steam; or, in other words, the terminal pressure of the steam should always be just sufficient to hold the two blocks in equilibrium, until the one which is uppermost for the moment is thrown over from the centre towards the descending side of the wheel. The bulk of the blocks may, however, be considerably diminished, by casting them hollow, and filling them up with lead.

"In order to avoid any inconvenience which may attend the enlargement of the cylinder and wheel, where an increase of power is required, there may be two, three, or more wheels, of medium size, attached to one shaft, or there may be two or more cylinders, mounted in one wheel, placed at angles proportionate to their number; as, for example, if two cylinders are used, they should be at right angles; and if three, they must be at angles

of 30° apart. The power of the engine, or engines, may be transmitted either from the shaft or through the medium of bands carried round the wheel, or wheels; and, when requisite, the rotary motion transmitted may be converted into a rectilinear one by any of the ordinary and well-known methods of effecting such changes. An engine of this sort is more especially adapted to be worked by high-pressure steam, and on the expansion principle, because of its offering no limit to the extent to which the expansion may be carried; it may, however, be readily worked also on the condensing principle, by carrying the exhaust-pipe into a condenser, with air-pump attached to it. The engine is represented in the figures as calculated to revolve in one direction only; but, should it be desirable to have the power of reversing the motion, that may be easily effected, by having a second parabolic guide-plate on the opposite side of the wheel, and providing some suitable means of causing the guide-wheels to shift from the one plate to the other.

"Secondly, My invention consists in the construction of a reciprocating steam-engine, on the same principle as the rotary one, before described—namely, that of employing the steam to shift weight-blocks to and from the centre of motion, and turning to account the power derived from the gravity of these blocks when brought into certain positions. Fig. 4, represents a side elevation of a pumping-engine on this plan; *B* is the beam which works, or moves, on the gudgeon *B'*, or centre of motion, and is supported by the pedestals or pillow-blocks, *C C*. *A* is a steam cylinder (shown in dotted lines), which occupies a place between, and is attached to the two sides, or halves, of the beam, *B*. To the piston (which works from one end to the other of the cylinder, as in ordinary engines) there is attached a rod, *E*, which passes out through a stuffing-box, *F*, at one end, and carries at its outer extremity a cross-head, *G*. *D' D'* are two weight-blocks, placed at a short distance apart, but connected by a wrought-iron rod, *I*, which are mounted on wheels, and run on rails, affixed to or cast on the sides of the two halves of the beam. The cross-head, *G*, of the piston-rod is connected to the weight-block, *D'*, which is next the pump-rod—so that whatever motion is given to the piston, is communicated, through the medium of the cross-head, to the weight-blocks. The steam is admitted into the cylinder through a port in the main gudgeon, or centre of motion; and the induction valve is worked by a tappet, *I*, so adjusted, that the steam obtains admission under the piston only when the beam is in an inclined position, and the piston is at the lower end of the cylinder; while, on the other hand, the exhaust-pipe, *N*, is always open for the escape of the steam from the higher end of the cylinder to the condenser, *O*. *P* is an air-pump, which is worked by the rod, *Q*. The mode of working this engine is as follows:—As the steam-piston moves from left to right and right to left, it passes one block over the centre of motion, while the other block is passed to the extreme end of the beam, when it is there stopped by the horns, or abutments, *T T*, which limits its range. The gravity of the weight-block so passed over the centre, depresses the end of the beam equivalent to the length of stroke of the pump, and when the weight-blocks are again passed from right to left, the end of the beam is again elevated. The motion of the engine is thus kept up by passing continuously the weight-blocks from right to left and left to right.—I consider this form of engine to be particularly adapted to rectilinear pumping purposes; but it may also be applied to rotary purposes, through the medium of a connected-rod and crank, in the ordinary way.

The great simplicity of this sort of engine—its cheapness and portability—the small cost at which it can be worked—and the various purposes to which it can be applied—are all strong circumstances in its favour.—We should, *a priori*, have anticipated that the motion would be somewhat unsteady, and the friction considerable; but a practical engineer, of great intelligence and experience, who attended for two entire days the working of an engine in Cornwall, constructed on the rotary plan, described in the first part of the specification, assures us, that the motion, on the contrary, was singularly equable and smooth throughout, and never once interrupted by any derangement of the parts.—*Mechanics' Magazine*.

## Mining Correspondence.

## ENGLISH MINES.

**ANTIMONY AND SILVER-LEAD MINES.**—We have costained over the greater part of this sett, and found three antimony lodes, varying in size from 1 ft. 6 in. to 6 ft. wide—some of which produce good stones of ore, similar to sample sent. We have raised from No. 1 lode upwards of 10 tons of antimony of a superior quality; and there now remains a large lode in sight, which is increasing in depth; the stratum is a beautiful killas, very congenial for antimony. We can, by driving about 50 fms., bring up an adit which will cut this lode at a depth of 12 fms.; and, by driving 20 fms. further to hill, will take the second lode at a depth of 20 to 25 fms.—this is also a most kindly lode, and likely to produce large quantities of ore at that depth; the other lode is still further to hill, and similar in appearance to the two before mentioned, only not so large, although it carries good stones of antimony; on the back, on the lower part of the sett, we have cut four silver-lead lodes—two of which produce good stones of ore, worth 20*l.* a ton for silver; we have driven our adit 30 fms. to hill, for the purpose of intersecting two of the lodes, which we shall take at nearly 20 fms. in depth; and I am in hopes will prove productive at that depth. One of these is Wheel Sarah lode. I have no doubt of this making a first-rate mine; and that, from the appearance, the produce for antimony and silver-lead will be large, and the shareholders may reasonably expect permanent returns.—*St. Bravad, March 22*.—[Some of the above antimony ore has been sent to Mr. J. W. Redmond, who states, "I have examined your specimens of antimony ore, which are exceedingly fine and valuable, and will yield from 60 to 70 per cent. of pure antimony, when properly dressed, and fetch in the market about 15*l.* per ton of 21 cwts.; but I consider it would answer your purpose much better to smelt it yourselves on the spot, as the necessary outlay for the erection of works would be but trifling, and the profits of the smelting very large—good ore costing 15*l.* per ton at present, and the refined metal fetching about 60*l.* per ton. You may calculate for certainty on a profit of 25*l.* to 30*l.* on each ton of your ore raised."]

**BARRISTOWN.**—The Kiln shaft is 8 fms. under the 18 fm. level, and the Slob shaft about the same depth; we have no change in the latter, but in Kiln shaft we have ground similar in character to what it is about the lode in the 18 fm. level—mixed with branches of white iron, with an increase of water. We have also a slight improvement in the pitches in the old mine. In the adit end the lode is improved—it will produce at present three-quarters of a ton per fm., and in the bottom of the level it will produce 1 ton per fm.; the pitches, in the back of the adit level, behind the end, are also looking well. The water at Nangle's is gradually falling as the adit end approaches it; and I expect, ere another fortnight, it will be quite dry, which will enable us to set several pitches there on tribute. The eastern flat-rod shaft is sinking with nine men, with as much dispatch as possible. On the whole, our prospects are greatly improved.

**BEDFORD UNITED.**—At Wheel Marquis, the lode in the 90 fm. level, east of the sump winze, is 3 ft. wide, and worth 35*l.* per fm.; in this level west the lode is at present small; the lode in the rise, in the back of the 90 fm. level east, is 18 in. wide, producing good saving work; and in the stopes, in the back of this level west, the lode is worth 12*l.* per fm. The lode in the 80 fm. level east is still producing saving work. There has been no lode taken down in the 70 fm. level east; in this level west, on the south lode, the lode is small and unproductive. There has been no lode taken down in the 47 fm. level west, in the south lode; the engine-shaft is 8 fms. 3 ft. under the 80 fm. level. In the 25 fm. level, east of the south engine-shaft, the lode is 2 ft. wide, producing stones of ore; and in the adit east, on this lode, the lode is 18 in. wide, composed of peach, spar, and mundic.

**CARTHEW CONSOLS.**—Our water-wheel, in this mine, is keeping the water from our new engine-shaft, below the 10 fm. level; but I fear it will not continue to do so long after the dry weather sets in. We are driving the adit end south, by three men, at 31*l.* 6*d.*; and driven south of south shaft, on the hill, 50 fms.; the end is looking very kindly, producing some small stones of very rich copper. The 10 fm. level end is looking much better than it has ever been seen, with a very promising lode, 2½ ft. wide; this end is driven from the shaft 9 fms.—present price, 20*l.* per fm.; the north end is much the same as last reported. The lode in the bottom of the engine-shaft is about 4 ft. wide, and looks very promising.—*March 21*.

**DEAN PRIOR AND BUCKFASTLEIGH.**—In the 20 fm. level west we are still driving on the south part of the lode, being of a very promising description; we intend, in the course of a few days, to cross-cut through the lode to the north wall, to ascertain its size and quality, being a large champion lode; in the pitch, in the back of this level, the lode is about 6 ft. wide, producing good work for copper. In the cross-cut, in the 30 fm. level, we are progressing fairly; and we are getting on with the work at surface with all possible dispatch, the dressing up the ores, &c., and shall lose no time in preparing the stamps' axle, and fixing the same, having erected a water-wheel already; this will answer the purpose of stamping the coarser work, halvans, &c.—*March 22*.

**DEVON AND COURTENAY CONSOLS.**—Since our last general meeting, we have cut ground for bearers, cistern, &c., and completed the other necessary work preparatory to sinking, and subsequently sunk our engine-shaft 3 fms. 3 ft. 3 in. below the 40 fm. level; there remains yet to sink, in order to be deep enough for our next level, 7 fms. 4 ft. 3 in.; this will include a sufficient depth for a tip plat and fork; this, I hope, will be completed in about three months from this time. In the 40 fm. level we have extended a cross-cut north 5 fms., and intersected the gossan lode, and driven upon it 4½ fms.—the lode averaging from 20 in. to 2½ ft. wide, composed of mundic, quartz, and stones of ore. On the south lode, we have driven east and west of the cross-cut about 8 fms., on a lode varying in size from 1 to 2 ft., producing several tons of ver. good copper ore; the present ends of these two levels, although not so productive as they have been, yet continue to yield saving work, with every indication of further improvement. [We published the particulars of the meeting of adventurers, on the 14th inst., at which this report was presented, in our last Journal.]—The lode in the end, driving east, on the gossan lode, is 18 in. wide, composed of mundic, spar, and peach, producing also some good stones of copper ore; in the end, driving east, on the south lode, the lode is 6 in. wide, containing mundic, spar, and spots of ore; in the end, driving west, on the same lode, the lode is 1 ft. wide, producing good stones of copper ore, mixed with mundic and spar—good saving work; the present appearance of the ground to the south of the lode, in this level, intimates that we are not far from the cross-course seen in the level above. Our shaftmen continue to sink the engine-shaft with all possible dispatch; the ground continues favourable.—*March 21*.

**EAST CROWDALE.**—Our engine-shaft has in the past week been favourable for sinking, and will be completed to the 58 fm. level by Tuesday morning next, when we shall begin to cut a plat, in order to drive to cut the main and north lodes. The 47 fm. level, driving on the course of the north lode, is still poor—the lode is about 15 in. wide, composed of spar, flookan, and killas, with spots of ore; the rise and stopes in the back of this level are very much improved in the past week—the lode is, on an average, 20 in. wide; the principal part of which is ore of a good quality, the other parts spar and peach. We are getting on speedily with the engine-house at Rix Hill, which will be finished in about three weeks.—*March 18*.

**EAST TAMAR CONSOLS.**—In answer to your inquiries, I beg to inform you, the number of pitches that could be set on tribute (when the mine is in full operation, as it at present stands) is nine, varying from 6*l.* to 12*l.* in 1*l.*, which, no doubt, would yield 35 tons of ore per month, at a cost of 850*l.*, which would leave a profit. No doubt, as the mine is extended—i.e., shaft sunk deeper, and levels driven, and more tribute ground open—the samplings will improve. The levels, which I should recommend driving, when the mine shall commence under the new company, are the 60 fm. level north and south, and the 46 fm. level north and south, and continue the sinking of the engine-shaft, when the 60 fm. level, north and south, is driven a sufficient distance from it. As regards the temporary mode of working, I should recommend to drive the 60 fm. level north, which would be opening good tribute ground, and raise sufficient ore to pay for driving; and also to set a pitch in the back of the 54 north, by four men; and also in the back of the 54 south, by four men; and in the 46 north, set the level to drive and stope on tribute, by six men; and, by so doing, these 18 men would raise 18 tons of lead ore, worth (say) 12*l.* per ton, at 180*l.* per month cost, and, as you will perceive, leave a good profit.—*March 19*.

**GALLOWAY.**—In costaining on the lode south, named in my last, we have not arrived at any satisfactory result. We have resumed driving north at the bottom of the first shaft, with a view to intersect an east and west lode; the end appears strongly impregnated with mineral, is wide, and not costly for driving.—*March 18*.

**GREAT MICHELL CONSOLS.**—There is no important alteration in the sump winze; the lode continues very large, and is, in its general character, very promising—2 ft. on the north part thereof is producing some good saving work. In the 35 fm. level, west of the sump winze, we have, during the past week, opened into the north part of the lode, which is composed of mundic, capel, spar, and a small proportion of copper; we intend driving on this part of the lode, being easier of progress.—*March 22*.

**HEIGSTON DOWN CONSOLS.**—In consequence of some let with the machinery, we have not yet got the water in fork. The shaftmen still continue driving the 20 fathom level east—the lode in this is producing some saving work for tin. The ground in Buddle's adit is at present more favourable for driving.

**HERODSCOMBE.**—We have cut through the lode, in the 21 fm. level; it is more than 5 ft. wide, very loose, and letting out plenty of water; it is composed of capel, white spar, mundic, and a little lead. I find the underlie to be about 14 in. to the fathom, which is a foot per fathom less than from the adit to the 12 fm. level.—*Capt. J. Bryant, who was appointed to inspect the mine.*



reports as follows:—"I find the 12 ft. level is extended on the course of the lode about 60 fms., where it varies considerably—some places it is 2 ft. 6 in. wide, composed of hard and friable quartz, capel, mundie, and flookan; other places it is not more than 6 in. wide, entirely composed of flookan. The lode is cut in the 21 ft. level, and opened on about 7 ft., where it is 5 ft. wide, composed of hard and friable quartz, mundie, capel, and flookan—I should say, it is not an unkindly lode in this place. I would advise your driving in the 21 ft. level—say, about 20 fms., to prove it—which, judging from the ground in sight, will not cost more than about 800; when I think you may fairly come to a conclusion whether you should sink deeper, or abandon the concern."

**HOLMBUSH.**—The lode in the 120 ft. level south is 4 ft. wide, composed of spar and stones of lead; the north end in this level is for the present suspended, and the men put to rise above the back of the level to effect a communication with the pitch in the bottom of the 110; the pitch in the back of this level is at present poor. The lode in the 110 ft. level south is 5 ft. wide, composed of quartz, and producing about 5 cwt. of lead per fm.; the lode in the 100 ft. level south is 4 ft. wide, composed of quartz and stones of lead, worth 42 per fm.; the pitch in the back of this level is producing some very good lead. The lode in the 100 ft. level south is 5 ft. wide, composed of spar and lead, opening tribute-ground; the lode in the 90 ft. level, sinking below this level, is 2 ft. wide, composed of spar and lead, worth 64 per fm. The flap-jack lode, in the 100 ft. level east of the lead lode, still continues in small branches, making two walls, about 8 ft. apart; there has been no lead taken down in the tribute-pitches, in the back of this level, since they were last reported. The lode in the 90 ft. level south is 20 in. wide, composed of spar and spots of lead. Our parcel of lead ore, computed 20 tons, was purchased by Messrs. R. Michell and Son at 18s. 17d. 6d. per ton, and it weighed 20 tons 8 cwt., payable, and will be shipped to-morrow at Calstock Quay, for the smelting-house at Point 21.

**KIRKCUDBRIGHTSHIRE.**—The lode in the 50 ft. end west is very large—in fact, we know not how large, as greater part of it stands north of us; that part on which we are driving produces about 3 ton per fm. We are now within 6 ft. of the winze, coming down from the 40 ft. level, in which there is a rich lode, but, from the dial, is 8 or 10 ft. north of said end. The lode in the 40 and is not so good as I last reported—worth now 5 cwt. of lead per fm.; on the counter east, in this level, the lode has greatly improved the last day or two, and the same will apply to the pitch working over this end. The 30 east is still in confused ground. In Keith's shaft the lode is 3 ft. wide, producing about 5 cwt. of lead per fm. On the dressing-floor, we have about 40 tons ready for shipment; but it is difficult to get suitable vessels for small cargoes.

**LEWIS.**—The 70 cross-cut, south of sump whim-shaft, is driving to cut the south branch—ground favourable. The lode in the 60 east is 3 ft. wide, producing some tin, and very promising; the lode in the 60 east, on south branch, is 6 in. wide, producing fair quality tinstuff; the lode in the 60 west, on south branch, is 18 in. wide, very much improved for tin during the past week, and now worth 200 per fm.; the lode in the back of the 60, are producing good quality tinstuff. The lode in the 50 east, on south branch, is 8 in. wide, yielding fair quality tinstuff. The lode in the 40 east, on south branch, is much the same as when last reported. The lode in the 20 east is 23 ft. wide, producing about tin enough to pay its own cost.—March 18.

**MENDIP HILLS.**—The appearance of the lode in the 38 ft. level, south of shaft, continues much the same—being 2 ft. wide, composed principally of spar and limestone, intermixed with iron—ground hard for driving. In the slag department, we continue to get on with the necessary work for the dressing-floors as fast as possible; and preparations are also being made for cleaning the slimes, which we find contain lead. The beds of slags, through which we have been laying open the cutting during the past week, have been rather coarse work; however, I am glad to say, we find it again improving, and hope to work the furnaces three or four days this week.—March 20.

**SOUTH WHEAL MARIA.**—We are still continuing to extend the cross-cut north, in the 20 ft. level, by six men; and, although we expected to have reached the north lode a fortnight since, we have not yet intersected it. I hope it will be in my power to report favourably on this part shortly; and that the branches, which we have already cut 3 fms. behind the present cross-cut, will not be found to be the lode eventually. We have six men employed in the south cross-cut, also in the 20 ft. level, and are driving about 6 feet a week; at this rate, I calculate we shall cut the great gossan lode south in about three months from this time, where I have great confidence in finding it valuable, from its appearance on the back; and, by extending west on its course, should it be found productive, we shall reach the great cross-course in driving about 100 fms., where it would be 70 fms. deep from the surface; here good lead ore has been found on the back for a great length in a very promising gossan; and, there being a counter lode underlying towards it, I fully believe that large returns of lead ore will be made.—March 23.

**SOUTH WHEAL TRELAWNEY.**—Snell's engine-shaft is in course of sinking with nine men, ground a little harder than when last mentioned—water just the same as usual. In this last week we have been engaged in dividing and casing down the whim-shaft from the engine-shaft; also doing some work about the lift, as it is getting long and heavy, for fear of accident.—March 20.

**TIN VALE.**—In consequence of Hooper's pitch being so good, and looking so well, three men came here yesterday to offer for the south end; they would not look at work, but positively came to me to take a pitch west of Hooper's pitch; of course, I could not set the pitch, as there is such a bustle already to get the ore and deeds to the surface from the paces now at work. The three men (whose names are J. Granville, sen., J. Granville, jun., and F. Era), finding it impossible to obtain the pitch in the back of the adit, west of Hooper's, left me for the space of half-an-hour; they then came back a second time, and this accosted me: Captain—we have thought on a plan how we could work the pitch if you will set it; I said, if you can do so, and do no mischief to the other paces, I have no objection. They said, they would not; and then told me how they proposed working, and to which I very readily agreed—viz.: to sink a shaft to the adit, and take the pitch for two months, if I would give them fair tribute; they asked 13s. 4d., when I offered them 10s.—the same as the rest of the tributers have—and pay for washing, spalling, and drawing the tinstuff to the stamps; however, we ultimately agreed for 12s. in 14.—they paying for washing, spalling, &c. Now, Sir, I leave you to judge what kind of prospects we have of our infant mine; for my part, I do not hesitate to say, if our enterprising proprietors carry out their object, and cut the great counter lode, that they will, after the next six months, be making a profit of 60000 per annum. I verily believe we have scores of pounds' worth of tin on the surface which will be fit for market the next coining, which I understand is in about five weeks, and it will take me all that time to bring the ore about with the stamp-heads I have now at work; at all events, there shall be no time lost in getting all the tin I possibly can against the next coining—I am in hopes also of having a good batch of stream tin fit for the market by the time above stated. I expect the men will ventilate Floyd's adit in the beginning of the next week, and then it is intended to drive on the lode to cut the great counter lode in the middle of the set.—March 18.—I have set another pitch on tribute, on the north lode, in Rose's adit, west of Granville and Co.; I will tell you boldly, that the mine is paying cost from the tin ore now raising, but I must have time to wash, stamp, and clean the tin, which I am doing as fast as human aid can do. I have suspended Floyd's adit, and put the men to drive west on the middle lode in Rose's adit, in order to open more tribute ground. I have four pitches now at work, and the men are getting above wages; and I hope, ere long, to have two more at work. You must get another stamp, as the tributers are fast increasing their tinstuff. We have a good mine; and I hope you have sent Capt. Nance to inspect it before I leave for London. Capt. Gregory is now here, and agrees in my opinion of the mine; and he tells me now that he will take the slimes and leavings on tribute, if I will set them; but I know better than do so, for this belongs to the owners, and will be of great profit to them.—March 22.

**TRELEIGH CONSOLS.**—The 120 cross-cut, north of Christoe's, is driving to cut the lode west of the slide. In the 110, east of ditto, the lode is 23 ft. wide, but little ore. In the 100, south-east of ditto, on the slide, we intend to cut the lode we are driving on in the 110 ft. level. At Garden's shaft, below the 100, in the country, the lode is standing 2 ft. north of the perpendicular; in the 100, east of ditto, the lode is 2 ft. wide, no ore to value; in the 100, west of ditto, the rise is holed and completed, but nothing done in this end. In the 90, west of ditto, the lode is 2 ft. wide, worth 64 per fm. In the 80, west of ditto, the lode is 18 in. wide, worth about 42 per fm. In the 70, west of ditto, the lode is 18 in. wide, with stones of ore only. In the 60, west of ditto, the lode is 4 ft. wide, worth 200 per fm.; in the rise, above the 60, the lode is 4 ft. wide, worth 64 per fm. In the adit east, on Wheal Parent lode, the lode is 4 ft. wide, south part ore, worth 57 per fm. The adit, north from the engine-shaft, is driving to cut Wheal Orphan lode.—March 18.

**WEST WHEAL JEWEL.**—In the 57 ft. level, west of Williams's cross-course, on Wheal Jewel lode, the lode is 2 ft. wide, worth 122 per fm. In the rise, in the back of the 70 ft. level, west of Williams's cross-course, on the same lode, the lode is worth 42 per fm. In the deep adit, west of Hodges's cross-course, on the same lode, the lode is 1 ft. wide, producing stones of ore. In the 30 cross-course, south from Tolcarne tin lode, the ground is harder for driving; in the deep adit, west of Quarry shaft, on Tolcarne tin lode, the lode is 18 in. wide, worth 64 per fm. In the 20 ft. level, in the back of the 12 ft. level, west of Quarry shaft, on Tolcarne tin lode, the lode is 5 ft. wide, worth 352 per fm.; in the shallow adit, west of Quarry shaft, on the same lode, the lode is 2 ft. wide, unproductive.—March 20.

**WEST WHEAL MARIA.**—The western engine-shaft is down below the 64 ft. level about 54 fms.—ground favourable for sinking. We hope to reach the present west in the 34 ft. level this week.

**WHEAL ADAMS.**—We commenced stoping the quartzose lode, south of the winze, in the 50 ft. level; but owing to a large stream of water issuing from a part of great friability, we could not succeed, and have, therefore, begun to

drive the level; the extension of 4 or 5 fms. will, no doubt, drain the lode, when it can be removed with greater facility, and at a much less expense. Where we left the stopes, the lode was 3 ft. wide, worth 152 per fm. The jack lode in the 40 ft. level, producing 4 tons of ore per fm.; the brown jack, however, is wearing out, and blue blende making its appearance. In the 18 ft. level stopes there is not so much copper as when last reported, but the lode produces much gossan, containing 20 ozs. of silver in the ton. The two parcels of lead ore, sold to Messrs. Michell and Son, will be shipped to-day.—March 21.

**WHEAL BARBARA.**—The steam-engine on this mine commenced working on Saturday last, and it is very satisfactory to me to have to say, that she started favourably, and is doing exceedingly well at the present time. I spent the greater part of the day there yesterday, and it was pleasing to see with what apparent ease she managed the water. She forked the mine in three hours; and it is my opinion, she will be equal to our most sanguine expectations, as regards our going in depth with her aid. This I always calculated on, from knowing the duty she performed anterior to her being fixed on this mine. I set to stummen yesterday two bargains—first, to cut down an end of the engine-shaft, cut plat at adit, divide and case down the shaft, and to widen the shaft at the bottom, for 54. This work will take the greater part of the week; then to sink 3 fms., by eight men, at 107 per fm., when I think they will meet with the lode, which may be done, in my opinion, altogether in about five weeks. I also set the winze, to sink from adit, by six men, at 42 per fm. The Quarry shaft will be commenced work on Monday next, by six men. Our greatest object should be to press downwards as fast as possible, as I consider we shall not be sinking long before we meet with a better stratum of ground, which, I have reason to believe, will materially affect our lode; and while we are labouring under the expense of a steam-engine, we should get down as fast as possible; and I hope—indeed, I am sanguine—it will be for some good purpose.—March 21.

**WHEAL TRESCOLL.**—We have now been at work five weeks; and the contractors have, amid many difficulties, driven above 100 fms. of ground; the shaft, in the eastern adit, is down nearly 7 fms.; and, unless it is near the lodes, the ground stands without timber. The smiths' shop and store-room are up, and being covered in; forge built, and the whim nearly complete. We anticipate cutting the D lode by this evening, and the rich lode in three weeks; in the western adit we are within 6 fms. of the ground lode, which we hope to reach during next week. The bar of hard ground, or elvan course, we find to be about 10 fms. through—what there is in the centre of it we do not know; but a general opinion prevails among the agents, that it contains a good lode. We have raised a quantity of very fine tinstuff, which we are preparing for the stamps—the produce of which, during the next fortnight, will be sent to market. A great deal has been said in the mining circles as to the impossibility of the contractors completing their task in anything like the time specified—viz.: eight weeks; but, from present appearances, we think there is more than a mere probability of its being done; they are now within 40 fms. of effecting their object, and are driving 12 fms. per week; altogether, the mine is in a very promising position.

## FOREIGN MINES.

**ALTEN MINES.**—The following is the estimated produce for January:—

| Mines.            | Tons ore. | Per cent. | Tons copper. |
|-------------------|-----------|-----------|--------------|
| Raipas.....       | 75        | 6         | 450          |
| Unken.....        | 6         | 25        | 210          |
| Rypper's.....     | 6         | 6         | 36           |
| Mancur's.....     | 6         | 5         | 36           |
| Michell's.....    | 10        | 6         | 60           |
| Old Mine.....     | 17        | 6         | 102          |
| Cole's.....       | 4         | 5         | 20           |
| Powder House..... | 2         | 6         | 12           |
| New Lodes.....    | 1         | 9         | 9            |
| Total.....        | 156       |           | 949          |

*Mining Report from the 25th January to the 7th February, 1848.*

**Raipas.**—The lode has again been found in the 5 ft. level; it produces good ore, and, though somewhat disordered, is still very promising. In Monk's shaft, the lode is increasing in size, and is now over the whole of the shaft; it is not rich, but wears the usual kindly appearance; the ground now opening will ultimately leave fair reserves for future stopes. From Monk's shaft we have commenced driving a 15 ft. level, on Labouchere's lode, which at this depth still continues to yield good returns of ore, with the best prospects of a speedy improvement. In the 10 ft. level we are stopping down a part of the back, for the purpose of tracing the lode up to the heave, before we resume the level. The lode in the foot stope at Carr's has lately changed its course; the men are at present working on a good course of ore, which appears to dip towards the 10 ft. work in the back of the old adit level easterly. Five of our tributers are now commencing driving towards Monk's shaft; the distance between these places is about 20 fms., but we may expect to intersect one or more lodes as we advance towards the north-west. All the operations at this mine are progressing satisfactorily, and the workings are conducted with the usual regularity.

**Unken Mines.**—The lode in the stopes on Ward's lode has greatly improved, and the returns have also increased. At Woodfall's the ice still confines our operations to that part of the lode above the 35 ft. level, where the tributers continue to make remunerative returns. A small but good bunch of ore has also been discovered by the tributers in the gossan on Hoskins's lode; it is now about 10 years since this lode was last worked; the great quantity of water continually rising to a certain height in the bottom of this mine, prevents our exploring it in depth, without the aid of machinery, or a deep adit level; the lode is, however, very promising, and I hope the stimulus given the tributers in this part will lead to more important discoveries.

**Rypper's.**—This mine has been worked since last report; this mine is still poor, but we hope to be more successful in the sink now commenced on one of the new lodes recently discovered to the eastward of the old workings.

**Mancur's.** has not answered our expectations; the stopes above the adit deteriorated daily, and are now suspended. The whole of our operations at this mine are, for the present, confined to the old workings, from which we expect to make a profitable return of ore; the prospects have not deteriorated.

**Michell's.**—The ice and water have now collected to such a degree, as to completely drive us from the mine, and we are now confined to the old workings, which are now carried on; and I fear there will be no chance of our being able to resume these places again before the summer. In the meantime we shall endeavour to explore other parts of the mine, where we hope to lay open some small reserves of ore ground.

**Old Mine.**—The severe frost, which most of the other mines has proved so detrimental to the operations, has here been beneficial, inasmuch as the whole of the surface of the water in Bergmeister's bottom workings (between 2000 and 3000 cubic fathoms of excavations) is now frozen sufficiently strong to enable us to commence the tribute pitches in the back of the old adit level easterly. Five of our tributers are now employed on this piece of ground; and, judging from the appearance of the lode, we have every reason to expect they will meet with good success.

**Powder House.**—The prospects have not undergone any material change since the workings have been resumed on tribute; the returns of ore are small, but of a good quality, and leave a remunerative profit on the operations.

**New Lodes.**—A small parcel of tolerably good ore has been returned from another new lode, discovered by some tributers in Judson's Valley, about two English miles to the southward of the works. We shall render them every assistance in exploring it; but, at this season of the year, the progress will be slow, on account of the difficulty of mining at the surface, whilst the thermometer stands at 45° below zero of Fahrenheit's scale.

The ice has still continued to increase during the last fortnight, and we have, in consequence, been subject to great inconvenience; the weather has, however, undergone a change, and we have now the prospect of being buried in snow.

## THE CORNISH MINING COMPANY.

At a meeting of shareholders in the Wheal Fortune Consols, several alterations in the constitution of the company were agreed to. The affairs of the company are in future to be carried on in the name of the "Cornish Mining Company," and the capital has been divided into 6500 shares, of 2s. each—the full amount to be called up, and having no further liability. The scrip of the company is to be transferable, without deed; but no shareholder can hold less than five shares. The prospects of the undertaking are encouraging, as will be seen by the several reports, from which we extract the following:—

*From Capt. Chynoweth, Newlyn, East Cornwall.*  
This sett is really a very desirable one, and it is my opinion, that it is one of the best sets in Cornwall. It is a fine piece of ground for mining, and I never was more taken up with any sett I have seen. The lode is from 4 to 5 feet wide, producing excellent saving tinstuff—specimens of which have been brought to my house this morning, by Captain John Hooper. We shall have a first-rate mine, and the shares are well worth a large sum at this time. Shares will be sought after in the Wheal Fortune Consols Mines beyond all other mines in Cornwall.—J. CHYNOWETH.

*From Thomas Julian, Esq., of Lower Porth.*  
The lode is altogether nearly 13 feet wide—four or five of which being excellent work—some stones being nearly solid tin, and is the best discovery that has been made for many years; they also discovered another lode in the south-eastern part of the mine, and went down on the back of the lode, and found good stones of tin; and with machinery, to which we could attach stamps, we could return tin immediately.—THOMAS JULIAN.

*From J. Hutchins, Esq.*  
The situation of the sett is, what I consider, a very favourable locality. A great deal of tin has been found in the neighbourhood, and several mines are now working in its vicinity. I consider the prosecution of this mine to be a fair speculation, particularly as it can be done cheaply—all the requisite machinery, &c., having been erected. The shafts have, I understand, pumps, rods, engine, &c., all fixed and properly arranged, for the purpose for which they are intended. The present shaft should be sunk (say) 12 fathoms; and at that level drive a cross-cut, which will be about 7 fathoms long, to the lode, No. 1.—the ground being of a favourable nature for working. The property now on the mine consists of a very good water-wheel, with rods, bobs, &c., attached, 7 fathoms of pumps (I believe 10-inch) in the shaft (a further quantity has since been applied), smiths' and carpenters' shops, and a small counting-house—all of which are necessary to the working of the mine, which is worth, to the present proprietors, as it now stands, its first cost.—J. HUTCHINS.

We give the following report in full, coming, as it does, from a gentleman whose opinion is deservedly respected in the mining world:—

Pursuant to your directions, I have inspected your mines. The first object with me was to discover the extent or limits of the sett, and which were pointed out to me by the agents. The situations of the mines and lodes is very favourable, being nearly west of the Beam Mines and the Rock Mines, from which large quantities of tin have been obtained, and are now continuing to be raised. On the south is Mineral Combe Mine and the Algeney Mine, both of considerable promise, though the latter is at present suspended. On the west there is a piece of untried ground (except some China-clay works), in which a good lode is discovered; and, if not one of yours, running parallel thereto. On the north, and partly in your sett, are the Wheal Fortune lodes, from which large quantities of tin have been raised. I have described the surrounding ground as minutely, perhaps, as is necessary. I next directed my attention to the openings on the lodes by the present company, and first observed the lode and counter lode; and though I wish, as much as pos-

sible, to avoid using strong language, yet I cannot do justice to the present appearances without saying, few places, that I have inspected (as far as the workings have been extended), present greater promise. The lode is about 3 feet wide, and shows good tin work nearly all the way on which it is opened—being about 6 fathoms long. This lode is the most southern one yet seen. Intersecting this, about 4 fathoms west, is the counter lode, on which very little has been done, but that little showed good tinstuff, about 2 ft. wide. We then examined the lode, No. 1, and here the shaft was not clear, as the water and rubbish had fallen in. From this shaft a rich parcel of tin had been sold; portions of good work are lying about it, and the attle will pay a profit, when your stamping-mill is ready. As the character of the lode seemed less clear than the other, I got two samples well pulverised; and, by the washing thereof, my doubts speedily vanished, as I found it a good sample of ore. I was told this lode is about 24 feet wide. I next saw No. 2 lode, which seems about 18 inches wide—not very rich. My next view was of a lode, cut during the time I was there, to the north of all before described; and, though only one pit was sunk thereon, yet a little tin was observable—the lode being full 3 feet wide. In the lobby to the wheel pit there is another lode discovered, the day before, but I could not discern any tin of value. To the north, and further, are the Wheal Fortune lodes, from which good tin has been obtained, partly in this sett; and I have no doubt, there are many other lodes within your sett, which the limited nature of your trials has not yet explored. I observed the strata in which the lodes are found very minutely, and consider it very congenial for the production of metals—it being a soft decomposed granite, and about a mile north of the killas, or slate, so that a speedy trial can be made. I examined the lobby to the wheel pit, and other preparations for the water-wheel, which are progressing favourably. I cannot omit one point, connected with the raising of tin mines—viz.: the present and future prospects, as they are now made. This article now sells high, and is likely to do so for some time to come; and I should push all works, to make returns at the earliest possible period. On the whole, I consider yours a very favourable sett; nevertheless, I must not conclude without saying, it will require steam-power to develop its resources.—JOHN PAUL, Mining Engineer.

## EAST WHEEL FRIENDSHIP AND EAST BIRCH TOR MINING COMPANIES—THE COST-BOOK SYSTEM.

Sir,—A short time since, the "East Wheel Friendship Mining Company" published its prospectus, in *extenso*, and therein declared, for the information of the desired proprietors, that, under the Cost-book Principle, a shareholder, who availed himself of his liberty to withdraw from the mine, could demand his portion of the value of the property and all machinery, &c., by giving notice to the secretary, or purser, to that effect. I intended at the time to have requested your exposure of this fallacy; but it passed from my mind.

Now, however, I find, by your last Number, that the "East Birch Tor Mining Company" repeats this monstrous absurdity. Surely, this is a way to prevent, rather than induce, capitalists and others to embark in mining undertakings—for who would submit to the power of a minority to rule the majority? Even worse than this would be the effect. Any individual shareholder, according to the opinion of the executives of the East Wheel Friendship and East Birch Tor Mining Companies, might compel a company to cease operations, or sell the property, that he might have his portion of everything. The principle carries absurdity on the face of it; and I need not tell you, Sir, that it is wholly at variance with the cost-book. For the information of these wise men of the "East"—for both companies belong to that region—it may be well to state, that this simple, yet stringent, system, which enables a shareholder to determine his liability at any time, by writing off his shares, if he cannot sell them, makes him, at the same time, forfeit all sums of money he may have previously paid, and relinquish all claim to anything which might accrue to him. When a body of gentlemen determine to introduce their projects under the "Cost-book System," it is a great pity they do not obtain some correct information on the subject. Indeed, it is greatly to be regretted that there is not some standard work published, especially now that home mining is attracting the attention of the chief capitalists and monied interests.

*March 23.*  
[We have more than once before stated, that our correspondent, Mr. Mansell, of the Pennant Mining Company, is arranging a second edition of his *Statistics on Mining*; but as he intends, we are informed, to go fully into the subject, it necessarily must take time to collect authorities on different points, and to complete so useful a work.]

## TUTWORK AND TRIBUTE—TO MINE ADVENTURERS.

GENTLEMEN,—I beg respectfully to call your attention to the present mode of setting the works on tutwork and tribute; and in doing so, I have two objects in view—the promotion of your interests, and the better qualification of the labourers; for, after many years' practice, I am fully persuaded the working of the old system has not proved beneficial to all parties. I am aware of the difficulty to convince a large portion of those interested in mining, that anything can be more fair or just than setting the work at a public survey; but it strikes me very forcibly, as it is now set, to be very little better than setting it at private contract; for I believe nine-tenths of the pitches and bargains to be taken by the former parties at the price first offered, which leaves no chance to other parties, but to cut them out, which is very seldom the case; for at the end of each taking, the former party considers this place as much their own as if their term had not expired. This impression makes them rely entirely on the agent's price, and prevents them from seeing any other place than that which they so wrongly call their own. And, in case their previous price proves inadequate, they expect the deficiency to be made up in the next. This produces much evil, as it tends to foster idleness and inefficiency, and in no way tends to encourage the more willing and industrious. In my opinion, every man that attends a mine setting should be on the same footing as those who attend a public auction—having the benefit of a fair competition for the work offered; but, under the present system, not one in fifty has anything like a fair chance for the work set at a mine survey.

The remedy I propose, is for the settler to offer, at first, only a certain portion of the price of each pitch and bargain, and advance, if necessary, to the agent's price. Under this system, the agents will find their judgment to be tested by all the practical and experienced miners in the neighbourhood—it would make our labourers men of figures, if not men of letters, for they would then make their own calculations, instead of relying on those of others, as every man would find it necessary to make himself as well acquainted with the price of every pitch and bargain in the mine as the one to which he last belonged, also to exert himself to the very uttermost during his take—knowing that, at the expiration of his term, he would have no better chance for it than any other party. This, I think, would be doing justice to all parties, and giving the adventurers the benefit of the opinions of all the practical miners in the neighbourhood, in addition to those of their agents. And I have no doubt, that every man, with the exception of first cousins and "slow coaches," would much prefer the new system of setting to that of the old, for it cannot fail to annihilate all partiality and first cousinship; and, I fully believe, there would be fully one quarter more labour done for the same money. And, having such a vast number of rich foreign mines to compete with, it behoves you to call every available improvement into practice. This new system of setting will admit of some exceptions—such as sump-shafts, or any other places of importance. A reasonable notice would be necessary, in order to give the labourers an opportunity to make their calculations. But to repeal the old system, and to give the new one a fair trial, it must be approved of by the adventurers, and well supported by their agents.

Milton Abbott, Devonshire, March 16.

## MENDIP HILLS MINE.

Sir,—A correspondent, under the assumed signature of "F.," has, in your paper of to-day, addressed the shareholders in the Mendip Hills Mines, "to remove," as he says, "the erroneous impressions," likely to be produced by the "false and mischievous letter" I had the honour of addressing to them through your columns of the 4th inst. The vulgar abuse scattered throughout this letter of "F." it is not my intention to notice—I shall treat it with the contempt it deserves. But, Sir, whilst casting on me repeated charges of untruth, your correspondent would have done better had he looked more to his own premises, before, as an old writer has said, he allowed his fertile genius to hurry him to conclusions—especially such conclusions as, based upon Jesuitical reasoning, sophistry, and humbug, will, I am sure, be as rightly estimated by the shareholders in Mendip Hills, as they will clearly betray to their origin from the "master-spirit" of Finsbury. For your satisfaction, Sir, I will state, before noticing a few of the extraordinary sophistries of your correspondent, that I have not a wish to cast suspicion upon plain dealing; nor have I "private" designs to gratify. I am an original holder in the company, and at the time I addressed the shareholders, held more than 300 shares; and it was because, having been grossly deceived in the formation of the company, and being called upon to subscribe towards an extravagant expenditure since, that I ventured to lay a plain statement of facts before the shareholders. And how does this "F." meet my facts? By a vulgar assertion, that they are false, and an attempt to palm upon your readers such wretched sophistry as the following to support it:—He says—Mr. Stainby does not receive 20000 a year for merely "satisfying an army of some 40 or 50 men at the works," but has "to provide offices and clerks in London, for the regulation and transaction of the company's affairs—to attend at such offices from nine to six o'clock—to receive and answer correspondence from merchants, agents, engineers, and others—to answer and satisfy inquiries of shareholders." From this description, one would think your correspondent was describing some mighty and important establishment, and not a company employing, as I repeat, not more than 50 labourers; and every person ignorant of the *real facts*, would, upon the face of it, think Mr. Stainby not overpaid; but, now, look at the case as it really stands. Mr. Stainby's offices are at his private residence, and he has no clerks employed specially for Mendip Hills, he is manager of at least 10 mining and other companies, each of which pays office rent, and 20000 per year for management—total sum, 20000 a year and upwards! Your correspondent, who appears so well versed in all that concerns Mr. Stainby, even to his "vast influence," united with his "comprehensive, practical, and theoretic knowledge," seems somewhat oblivious here; and, great as the "talents" of Mr. Stainby may be, I would undertake to provide a manager as "talented" and as efficient, and one who would, more than all, give satisfaction to the public and to the shareholders for 1000 a year.

"F." next states, that the directors do not receive 24000 a year for merely "signing a cheque once a month." No one, Sir, but a simpleton, or one sadly at a loss for an argument, could have supposed that anything was meant by that portion of my letter, than merely to show that the directors have little or nothing to do for their pay; and the latter may be more forcibly shown by the fact, that one resides at Tamworth, and another at Northampton; and I challenge "F." of Kingsland, or Mr. Stainby, of Finsbury-square (if they are not identical), to show by their books, that these gentlemen have attended meetings in "London twice a month," as is stated; or that this board of five directors, as is further stated, hold half, or anything like half, the shares of the company. The next paragraph of your correspondent's, relative to the purchase of the mines by the promoters of the present company, and the sale to the present shareholders, is so curious for its Jesuitical reasoning and moral (I) ignominy, that, without attempting to waste through his tortuous windings, I shall content myself with relating what I really know, and for the facts of which I pledge myself.

The old Mendip Hills Mining Company was in 1800 at times; these shares were pur-



ST. JOHN DEL REY MINING COMPANY.

Excuse me, Mr. Editor, if I say that communications, such as I have been noticing, ap-

**TAVY CONSOLS MINE.**

TAVY CONSOLS MINE.

BEDEFORD UNITED MINING COMPANY.

JOHN BROWNE, Esq., in the chair.

It was proposed by E. PARKINA, Esq., and seconded by W. A. THOMAS, Esq., unanimously agreed to, that the thanks of the meeting be given to the chairman, for his able conduct in the chair, and for the lucid manner in which he developed the prospects of the mine.

G. M. HARRISON, Esq., in the chair.

**GREAT ROUGH TOR CONSOLS MINING COMPANY.**  
A general meeting of shareholders was held at the offices of the company

WILLIAM A. THOMAS, Esq., in the chair.

in referring to the other of the company's work of surface engines and machinery.



auxiliary connections and arrangements altogether, the company need hardly be informed that anything of such kind is of the very first character, capability, and convenience; and, moreover, of undoubted durability. There is the 40-inch cylinder steam-engine admirably doing all her work, as required, at both shafts—the connection and application of power being by perfect line of 240 fms. of horizontal iron rods, bobs, pulley stands, and pulleys, all complete—the which, working in connection with pitwork in two shafts, of suitably large dimensions and strength, will ensure a permanently efficient trial and working for this concern. In addition to all the company's machinery in application, there is enough of pitwork for carrying down both the shafts to this point of intersection (by cross-cut) of lode as intended in the 26 fm. level, below lobby. There are also the company's buildings of counting-house, store-houses, carpenter's and smith's shops, stables, pump-house, powder magazine, &c.—the whole of which have been put up in the most substantial and durable manner, to stand the heat of the tremendous weather and storms that this mountainous and exceedingly-exposed district is for two-thirds of the year subjected to.

The whole of such accomplishments have been in a part of the country always known hitherto to have been inaccessible by anything like a regular road, or approach from any of the main roads of the country; and, therefore, the absolute necessity of the considerable outlay that the proprietors have been at, in the formation of such roads as are to be now seen connecting their property with the main thoroughfares of the country, admitting of direct and cheapest possible transit of required supplies of materials for their works, and to which also their copper ores will, whenever required, be taken to the places of shipment, at the cheapest possible rate. We hope that the few foregoing imperfect and hastily penned remarks, will serve to give the adventurers something like an approximate of the great importance of the works, prospects, and probable results.

A call of 2s. per 512th share was made.

#### MENDIP HILLS MINING COMPANY.

A special general meeting of shareholders was held at the offices, Finsbury-square, on Friday, the 24th instant.

J. BARWELL, Esq., in the chair.

The notice convening the meeting having been read, the following report of the directors was submitted to the meeting, after some prefatory observations by the chairman.

RIFPORT.

The object of the present meeting, as specified in the notice convening the same, is to receive a statement of accounts since the last meeting, and a report from the directors and agents. The committee have been actively engaged for some months in bringing into a state of efficient and profitable working the large deposits of slags which became the property of this company by the grant of land from Lord Clifden, as also in developing and bringing into working condition all available slag belonging to this company. The works, which were found necessary to render the operations practicable in detail, profitable, have occupied considerable time in their construction, and they have involved the outlay of some capital; but the proprietors will be satisfied from the local agent's report, and the assurances of the committee and Mr. Johnson, that such time and capital have been judiciously, economically, and successfully expended. Since the last meeting a tram-road, 626 yards in extent, has been constructed, an engine-house has been built, and an engine with fan has been purchased and erected, three furnaces have been built, washing-floors made, walls for smelting-house have been erected and covered in, and 182 feet of flues, with trip-hoppers, conveyers, and several large and rich beds of slags developed; and, for the purpose of commanding a never-failing supply of water, launders have been formed, and extended upwards of 6000 feet, or 14 miles in length. The several members of the committee have individually and collectively visited, upon several occasions, this property, and carefully and anxiously considered every operation which has been carried into effect; and they can now express an unqualified opinion, that every portion of the work, and every item of the expenditure, was of absolute necessity—that it will ultimately tend to a profitable result, and permanently conserve the interest of the shareholders. The report from the agent will describe in detail the various proceedings since the last general meeting; the committee, therefore, deem it unnecessary to say more respecting the slag department, than that the furnaces and all necessary work being completed, lucrative returns may speedily and confidently be expected. The prosecution of the mine has been limited as much as practicable; the expenditure being confined to proving one object, and the employment of men, and expenditure of money, being limited to the operations required by the covenant of the lease; and, although the mine prospects are not propitious, the expenditure there has a definite object, and may be attended with success; but, the primary design in continuing the working of the mine is to preserve the shareholders' right in the property, which would certainly be endangered, and might be subverted, by a total abandonment of mining operations. Your committee can now congratulate the shareholders upon the propitious state of their property, which they confidently believe will shortly return an ample profit for the capital invested. To consummate this result the committee have constantly and actively exercised their utmost influence and ability; how far they have been successful must be left to the result of these works, and the candid opinion of their fellow shareholders. But, whatever may be the result of this enterprise, the committee assure the shareholders that they have struggled anxiously to preserve the trust committed to their charge; and that if confidence is extended to them, they will continue to discharge their duties efficiently and faithfully.

The financial statement of the affairs of the company, of which the following is an abstract, was then laid before the meeting:—

| Abstract of Accounts.       |            | Ca.                            |            |
|-----------------------------|------------|--------------------------------|------------|
| Da.                         |            |                                |            |
| August to Feb., inclusive.. | £1763 1 8  | Balance from last account ..   | £199 17 9  |
| Tram-road iron, &c. ....    | 357 4 1    | Received on 21st instalment .. | 12 10 0    |
| London expenses, &c. ....   | 244 13 8   | " 30 " ..                      | 173 15 0   |
|                             |            | " 4th " ..                     | 696 5 0    |
|                             |            | " 5th " ..                     | 1926 5 0   |
|                             | £2364 18 5 | Balance ..                     | 256 5 8    |
|                             |            |                                | £2364 18 5 |

The following report of the agent (F. C. Harpur) was then read:—

**Mendip Hills Mine, March 9.**—As your half-yearly meeting is about to take place shortly, perhaps you will require a detailed account of our proceedings during the past six months; I therefore beg, in the first instance, to offer some remarks on the underground operations. The entire distance driven in the 38 fm. level, south of Stainby's shaft, is about 90 fms., on a lode varying in breadth from 2 to 8 ft.; during the whole distance it presents much the same appearance, composed of flint, white spar, and iron, producing at times small sprigs of lead in the present being driven in being driven by two men; the lode is 3 ft. wide, consisting chiefly of spar and limestone, intermixed with iron, ground very hard for driving; 34 fms. from shaft a winze has been sunk below this level 18 fms. 3 ft. on the continuation of a large cavern, mentioned in a former report; when we first commenced operations here we found the lode about 5 ft. wide, but gradually diminishing in size as we proceeded downwards, at the bottom, it being nothing more than a small vein or division of the rock—from this I cannot give you any encouragement as to our future prospects in depth. The slag department a tram-road has been laid down to take the slags from the valley to the washing-floors, the length of which is 626 yards being the nearest point we could bring the water to the slag ground. An engine-house has been built, and engine and fan erected, for producing the blast required for reducing the slags into metal; three furnaces have been built, two on the common principle, the other an iron one. The walls of the smelting-house are also completed and covered in, as also about 182 ft. of flues, and two deposit chambers, through which the smoke, &c., from each of the furnaces has to pass before it goes to the chimney; by this means the whole of the valuable matter that escapes from the furnace is preserved, which in the ordinary way goes off in the atmosphere, and is wasted; in the slag ground, we are at present removing a bed of slags 11 ft. thick, some part of which is work of fair quality, particularly that near the bottom, and am glad to say we find it improving in quantity as we proceed up the valley; about 180 yards further up than we are now working, a trench has been laid open across the valley, where we have some very good beds of slags indeed, which induce us to lay open the cutting up the valley sufficiently wide for the waggon to pass, and the slag to be taken up as fast as possible, (the lode being some, we shall not only have some 18 months or 2 years in working the interior slag ground, but I also feel myself justified in saying we shall make regular and profitable returns; we have now several tons of lead on hand, which will be ready for market shortly, as it only requires to be re-smelted into pigs, which shall be done immediately on the arrival of the small furnaces I ordered at Bristol, which I am promised to have in the course of a few days. The carpenters are at present engaged making the necessary machines, &c., for clearing the slags; we have eight now at work, and three in course of making, which are being done with all possible dispatch. In conclusion, I beg to say that we have nearly the whole of the machinery required for working the mine, consequently our expenses will be greatly reduced, as it will in future be merely the labour cost, which I will keep as economical as possible, consistent with the proper working of the mine.

The CHAIRMAN expressed his regret that the underground operations had not been attended with the success anticipated. Mr. Johnson had carefully inspected the property of the company, and entertained sanguine expectations, as to the results which might be contemplated from the smelting department. At the same time, he must say, that a further call would be necessary to carry out the objects of the company, with those beneficial results which they had a right to anticipate. He could only add that, holding 500 shares in the undertaking, he was most earnest and anxious that the affairs of the company should be prosecuted with energy; at the same time, he should be happy to meet any question which might be submitted by any gentleman on then present.

Mr. P. N. JOHNSON entered into an explanation, as to the nature of the workings, and the stratification of the mine, from which we gathered that the country is limestone, the lead making in bunches. At present only four men were employed underground, which was essentially necessary to observe the clauses in the lease.

The Rev. Mr. MAJOR wished to ask a question, as regards the abandonment of the mine, previous to the report being received, and proceeded to enter into several matters appertaining to the slag or smelting department, which he considered was that to which the attention of the company was to be directed, and would be glad to learn what was the value of the slag, or the returns which might be anticipated.

Mr. P. N. JOHNSON, in explanation, stated that the slag varied in thickness or depth, in some instances, being 11 ft.; and while in some instances only 1 ton might be obtained out of 40 of rubbish or attle, he might say that the average was 1 in 6, producing, say, 22½ per cent., which yielded from the furnace 16 per cent. of lead; the assay from the slag was 14 to 50 per cent., averaging 22½ per cent. as before stated—the lead thus produced giving 98 3-10ths of pure lead. Calculations had been made as to the returns, and which might be taken roughly: with the water-power which they had he would take two furnaces, which would reduce 14 cwt. each in the 24 hours; but assuming 1 ton of lead as worth 12s., this would give 26 tons per month, yielding a net profit of 25 to 30 per cent., and that arising from the slag alone. He had recommended that the slag should be worked open as a quarry, and not by the old system of delving and forming a cone reversed. Six pits or openings had been made to prove the depth and extent of the slag. Mr. EDMONDS wished to know whether, supposing that the operations of the company were confined to the smelting department, there was any necessity for five directors; he considered two or three sufficient, and by such reduction they would limit the expenses of the establishment.

Mr. JAMES considered that the expenses should be kept down, more especially if the operations of the company were confined to smelting, and that he did not consider five directors necessary.

The CHAIRMAN begged to observe, that although he held a large interest in the undertaking, he should be ready to retire—for residing, as he did, 140 miles from the spot

where they were then assembling, it was better pleasurable, or profitable, to perform the duties imposed on him, although he felt, in so doing, he was not only acting for the benefit of the proprietors generally, but protecting his own interest.

A conversation then ensued as to the propriety of dispensing with the services of the purser, as being an extra charge on the mine, but which, in the end, was dismissed—the meeting expressing their confidence in the directors exercising the powers with which they were vested, for the benefit of the adventurers.

The Rev. Mr. MAJOR would suggest, that meetings hereafter be held every three months, which was, in the first instance, objected to by the chairman, but subsequently assented to, on the part of the directors, through Mr. Stainby.

Mr. JOHNSON wished the meeting to express an opinion, so as to warrant the directors, should they deem fit, to abandon or dispose of the mine—whereupon Mr. GOSLING, the solicitor of the company, stated that the deed gave full power to the directors to act as they might consider prudent, subject, however, to their acts being confirmed at a special general meeting of the proprietors. It appeared, that the total amount of arrears of calls did not exceed 300l.; and, in each case, circumstances had arisen, which explained the cause of delinquency. It was then agreed upon, that a further call of 5s. per share should be made, which was agreed to unanimously.

In answer to a question put to Mr. JOHNSON, as to the opinion he entertained of the adventure, and the prospect, if any, of any further call, that gentleman expressed his opinion that, if the proposed call was not ample, he should consider the concern as a failure. This, however, was far from his opinion—having full confidence in the undertaking.—Mr. JAMES was well pleased with the information afforded by the directors, and their able adjunct, Mr. Johnson. He would content himself with moving a vote of thanks to the board—leaving to some other proprietor to offer any observation, with reference to the latter gentleman, whose services he, for one, was most ready to recognize. The motion having been carried, the CHAIRMAN, in returning thanks, referred to the several letters which had appeared in the *Mining Journal*, reflecting on the conduct of the directors and the operations at the mine. He, for one, was perfectly indifferent as to any remarks which might be made, while they pursued the same course they had heretofore observed. He was quite satisfied that, by the promulgation of such expressions as those to which he referred, no good effect could be achieved—such being rather calculated to retard and bring the mine into disrepute. The books and accounts were at all times open; and he considered the writers of such letters should first have satisfied themselves as to the correctness of the charge, ere they put them forward.

A vote of thanks was most cordially given to Mr. P. N. JOHNSON, who having briefly replied, the meeting separated.

#### WHEEL MARY ANN MINING COMPANY.

At a general meeting of shareholders, held at the White Hart Inn, on Wednesday, the 22d inst.—Capt. PETER CLYMO, jun., in the chair,—the foregoing accounts for Dec. and Jan., showing a balance of 593l. 2s. 7d., having been examined, were allowed and passed, and carried to the debit of the next account.—It was resolved, that Capt. Peter Clymo's salary, as purser and manager of the mine, be advanced from 3 to 5 guineas per month, from the end of Jan. last.

The accounts showed the expenses for the two months as, 770l. 6s. 2d.; the proceeds, as 734l. 6s. 11d.—leaving balance against the mine of 593l. 2s. 7d.—The sales during the two months had been—one parcel of lead ores, sold to B. Sommers, Esq., 39 tons 18 cwt. 3 qrs., at 162 1/2s., 668l. 4s.; and one to J. T. Treffry, Esq., 36 tons 1 cwt. 3 qrs., at 12 1/2s., 631 1/2s. 11d.—731 1/2s. 11d.

The following report, from Capt. P. Clymo, was read to the meeting:—

**Wheel Mary Ann Mine, March 22.**—The lode in the 40 fm. level, south of the boundary, is in two branches, with a 2-ft. horse between, and will produce 5 cwt. of lead per fm. The lode in the 30 fm. level, south of Durratt's shaft, is 4 ft. wide, composed of gossan, can, quartz, and some lead; the stopes in the back of this level are looking well, but the lode is hard. We have just commenced sinking a winze under the 15 fm. level, where the lode is 3 ft. wide, composed of gossan, can, and lead, and worth 8l. per fm. We have extended on the lode lately cut in the 30 fm. level, at Pollard's shaft, about 6 ft., where it is about 18 in. wide, and very kindly, but not producing much lead. The accounts do not look so well as I anticipated, owing to the parcel of silvery munda not bringing so high a price as we were led to expect from the assays. We intend sampling on the 3d of April next 60 tons of ore, which will considerably more than pay our present balance.

#### WHEEL TRELAWNY MINING COMPANY.

A general meeting of shareholders was held at the Fountain Inn, Liskeard, on Tuesday, the 21st inst.—Capt. JOHN BRYANT in the chair.

The accounts for November and December, showing an ultimate balance of 668l. 19s. 10d., having been allowed and passed, and carried to the credit of next account, it was resolved:—"That Mr. W. West, having proposed to bring and erect a steam winch-engine on Wheel Trelawny Mine, at his own expense, to draw all the attle and ores to the surface, and provide all labour, engine-men, coals, hemp, and every other material necessary to keep the said engine at work, and in proper repair, from the 72 fm. level and all levels above, commencing from the boundary south of Wheel Trehane Mine to the northern boundary of Wheel Mary Ann Mine, for the sum of 28l. per calendar month—and he having also proposed and agreed, that such engine shall be of sufficient power to enable the company to sink 200 fms. in depth—and, also, to be paid an increase of 2l. per calendar month for every 10 fms. under the 72 fm. level, it is resolved, that Mr. West's offer be accepted."

The accounts showed the general expenses, for the two months, as 2037l. 1s. 9d., and the proceeds, 2285l. 4s. 1d.—balance of profit, 248l. 2s. 4d.; in hand from end of Oct., 699l. 10s. 8d.—847l. 13s.—from which is deducted surgeon's charges for the year, 47l. 11s. 4d.; Mr. West, for erecting Trelawny's steam-engine, &c., 58l. 17s. 10d.; bankers, for interest and commission, 82l. 4s. 10d.—The sales had been: Jan. 8—one parcel of lead ores, sold to Messrs. Walker, Parker, and Co., 71 tons, at 144 1/4s. per ton, 10438l. 14s.; Feb. 8—ditto, to Messrs. Sims, Williams, Nevill, and Co., 83 tons 7 cwt. 1 qr., at 142 1/2s., 12387l. 10s. 1d.; and from Wheel Trehane adventures, for the use of Wheel Trelawny engine, and water for dressing the ores, two months, to 17th Feb., at 16s. 10d., 33l.

The following report, from Capt. John Bryant, was read to the meeting:—

**Wheel Trelawny Mine, March 21.**—The 62 fm. level cross-cut, east of Phillips's shaft, is driven 8 fms., and we are now daily expecting to meet with the lode. The ground is favourable for driving, and, unless the lode makes a much greater underlie than it did from the 42 to the 52, we shall see it this week. The lode in the 52 fm. level north is 2 ft. wide, composed of can, munda, and lead, worth 12l. per fm. The ground in this level has been for some time at present, rather hard; and, there being a quantity of water issuing out of the lode, makes it troublesome for driving. The lode in the south end, in this level, is 3 ft. wide, chiefly composed of can, with quartz and lead, worth 10l. per fm.; the stopes in the back of these levels are not altogether looking so well as I have seen them at times; however, they are producing a moderate quantity of ore. The lode in the 42 fm. level north is worth 10l. per fm.; the stopes in the back of this level are producing a fair quantity of ore. The lode in the 32 fm. level north is 4 ft. wide, chiefly composed of can, with spar, munda, and lead, and worth 8l. per fm. The ground in this level is much eased in this end—and, if it continues, we expect this level will be extended to Trehane boundary in three weeks, as we have not more than 8 fms. to drive; the stopes in the back of this level are producing a fair quantity of ore. Trelawny's engine-shaft is sunk 7 fms. 1 ft.—under the 42 fm. level, where the ground is still favourable; and, by the end of April, I expect this shaft will be sunk to the 52 fm. level, where we intend to drive a cross-cut to the lode. The 22 cross-cut east is still in the course of driving by four men, where the ground is somewhat eased, being a clean killer. At Vivian's shaft the 30 fm. level is at present, rather hard; the lode in the end is 2 ft. wide, composed of spar, can, and lead, worth 10l. per fm. The ground in this end is still good for driving. The cross-cut driven from the lode to Vivian's shaft is now extended about 6 fms., where the ground is still hard. We shipped February ores, 83 tons, on Tuesday last, and intend to sample again on the 28th inst., about 80 tons.

**HARIOUWBARROW OLD MINE.**—A general meeting was held at the offices, George-street, Plymouth, on the 14th March, when the proceedings of the special meeting, held on the 12th February, having been confirmed and adopted, the proceedings of the committee during the past quarter were also confirmed, the members re-appointed, and the thanks of the meeting given them for their valuable services: the account of the sale of the materials was entered in the cost-book, amounting to 1456l. 13s. 1d.; and the purser's accounts, showing a balance in his favour of 131 7s. 4d., having been examined, were passed and allowed. A call of 1l. per share was made, to discharge the liabilities, which now amount to about 700l.

[From the Plymouth Journal.]

**WHEEL FRANCO.**—In the 47 fm. level, west of the cross-course, the lode is still disordered and poor; in the 47 fm. level, east of that cross-course, the lode is becoming more regular, and is greatly improved in size, and the quantity of ore is greater. In the 62 fm. level the capels of the lode are not so hard as they were in the 47; it is impossible to say how long it may be before the lode is seen in this level—but from appearance it will not be long. The quantity of ore sampled on Tuesday was fully equal to that expected.

**WHEEL CALSTOCK.**—In driving towards the expected junction, another lode, about 3 ft. wide, producing a very little ore, but of promising appearance, has been cut.

**EXMOOR ELIZA.**—The sinking under the 12 fm. level is, we understand, to be immediately commenced.

**PLYMOUTH WHEEL YEOLAND.**—The 12 fm. level east continues to be very good; the 12 fm. level west is now shallow, and is fast approaching the surface; still the lode in the back is producing tin, and in the bottom of the level it is good; this level has opened 204 fms. of good ore ground. The engine-shaft has been sunk 2 fms. 2 ft. under the 12 fm. level, and the ground is very favourable, both for making ore and sinking; and, should it continue as at present, the lode will be cut in the 22 fm. level by the 1st June. The tram-road from the shaft to the stamps (self-acting) is finished. There will be about 7 tons of tin sampled in the first week in April.

On Thursday last, R. Wellington and his son were committed to Bodmin, by Sir W. P. Call, Bart., at Whitford, charged by the adventurers of Kit Hill Mine with raising tin from one of the lodes in that seat, without permission or authority to do so, since the mine has been idle.

**SILVER VALLEY.**—The men are all discharged from this mine; the engine is expected to be stopped in a few days, but it is intended to give the silver lodes at Wheel Slaters a further trial.

**PLYMOUTH WHEEL YEOLAND EAST.**—The adit level is being cleared up, and an old shaft on its course opened—this is progressing favourably. It appears that all the backs were worked away by the old men.

**BLACK TON AND VITTEY MINE.**—The tin sampled on Monday rather exceeded 5 tons.

**WHEEL ASH.**—The engine-shaft has been sunk 7 fms. under the adit level; the lode is rather more than 5 ft. wide—3 ft. being solid munda, and the remaining 2 ft. peach, plain, and soft spar, with occasional lumps of gossan near the wall of the lode, in which gossan is found a small quantity of black ore. The character and general appearance of the lode has greatly improved during the last week.

#### THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending Mar. 18 was 16,999; amount of money, £66 13s. 3d.

#### MEETINGS OF PUBLIC COMPANIES DURING THE WEEK.

**TUESDAY.**—Bosherville Pier and Botanical Gardens Co.—London Tavern, at Two.  
Economic Life Assurance Company—offices, at Two.  
**MONDAY.**—British American Land Company—London Tavern, at Two.  
Newmarket Railway—London Tavern, at half-past One.  
Lambeth Water-Works Company—offices, at Eleven.  
**WEDNESDAY.**—Lambeth Water-Works Company—offices, at One.  
British Gas-Light Company—offices, at One.  
Professional Life Assurance Company—offices, at Twelve for One.  
**THURSDAY.**—Copiapo Mining Company—offices, at One.  
Newport, Abergaveany, and Newport Railway—London Tavern, Twelve.  
Family Endowment Society—offices, at Two.  
Fallowfield Life Assurance Company—offices, at Twelve.  
City Steam-Boat Company—offices, at Twelve for One.  
**FRIDAY.**—Van Diemen's Land Company—offices, at One.  
Patent Metal-Cored Railway Sleepers Company—offices, at Twelve.  
Royal Thames Steam Navigation Company—offices, at Twelve.

[The meetings of Mining Companies are inserted among the Mining Intelligence.]

#### Current Prices of Stocks, Shares, & Metals.

**MINES.**—Since our last, we find several transactions in mining shares have taken place; and, from the inquiries made, we are inclined to think an improved market is approaching. The business actually done is principally confined to the leading or paying mines, in which the speculative public now perceives that mining investments, when effected under judicious and prudent agencies, are both safe and remunerative.

Shares in the following mines have been done this week—viz.: Great Devon Consols, Tamar, Wheal Trehane, Trevelick and Barrier, Wheal Williams, Birch Tor, South Wheal Betsey, Tavy Consols, Wheal Mary Ann, Mendip Hills, Carn Brea, Wheal Mary, West Wheal Treasury, Kirkcudbrightshire, &c. Several shares in Birch Tor Tin Mine have been sold. From a correspondent we learn that a parcel of 8½ tons of tin was sold on Tuesday, which realised 340l., whilst the cost amounted to about 200l. Wheal Trescoll shares have been sought for at a fair premium, but we are not advised of any sales.

Trevelick and Barrier two-monthly account meeting declared a dividend of 8l. per share in Trevelick, leaving a balance of 112l. 15s. in favour of the mine. Trelawny meeting held on Tuesday last, shows a balance of about 847l. now in hand.

Bedford United Mining Company held their bi-monthly meeting on Thursday, when a dividend of 6s. per share was declared (noticed last week in error). This is the first meeting under the new arrangement—viz.: the Cost-book—consequently, the holders of scrip will, of necessity, register, to enable them to receive the dividend. The balance in hand, after payment of said dividend, will be about 2160l., including ore bills coming due.

The Great Rough Tor Consols Company held their two-monthly meeting on the same day, when a satisfactory and luminous report was presented to the shareholders (vide notice of meeting in another column).

The Bwlch Cwmerfin Company held a meeting on Wednesday last, when a call of 50s. per 1024th share was deemed necessary. We certainly anticipated a dividend would have been declared, after the great amount of premium paid per share a few months since. We learn that the mine is looking highly satisfactory.

The annual meeting of the Carn Brea Company was held yesterday, when a dividend of 8l. per 1000th share was declared, payable on the 15th of April.

We learn that the share list is now so far completed, as to allow the East Wheal Friendship Company to commence operations on the mine, which, we understand, will take place next week, when the shares are expected to realise a premium.

We understand, that considerable business has been done in Marke Valley during the week, at greatly-improved prices.

The judicious arrangements made by the present company, for working the East Tamar Mine, leaves but little doubt of the undertaking being very soon brought into a profitable position. It is believed, by those well conversant with the mine, that no further amount than the deposit of 11s. 6d. per share will be required. We understand, that the list of 9000 shares is all but completed, and from a highly encouraging report (which appears in another column), the shareholders may congratulate themselves on having acquired a good mine at a cheap rate.

At the meeting of Mendip Hills shareholders, a considerable discussion took place upon the large amount of expenditure incurred in salaries to directors and manager. Being, however, a special general meeting, for a specific object, it was not competent for the meeting to propose resolutions abolishing them; but it being clearly the opinion of a large majority of the shareholders present, that five paid directors were useless, and that three would be sufficient, an amicable understanding was come to between the directors and shareholders, that the former should take the reduction into their serious consideration before the next meeting. We believe, however, it is the intention of some large and influential shareholders to call a special meeting, to amend and alter the rules and regulations of the company, so that they may have some part in the management of their affairs. The impression of the meeting appeared to be, that whilst the secretary was receiving his 200l. a year for management, and his salary as director, Mr. Johnson, the only useful member of the company, was receiving a very trifling remuneration.

Accounts have been received from the Alten Mines, during the past week, which report that the indications at Labouchere's lode are of a satisfactory character. We also hear that the Quanenagen Company has been well supported by the Alten proprietors, by whom almost all the shares have been subscribed for. This we are pleased to find, for the advantages gained by the latter company will be of great consideration. From a private party, who is well acquainted with the Quanenagen Mines—having resided in the locality several years—we learn, that the mines were rich, but inadequately worked; and, under efficient management, he considered the property would be a valuable acquisition.

The following arrival of specie by the Peninsular and Oriental Company's steam-ship, *Montrose*, arrived at Southampton, on Sunday, having 25 packages of specie (value, 17,000l.), and a general cargo of merchandise.

**HULL, THURSDAY.**—Our market has been gradually falling since our last, but to-day there are signs of improvement, owing to the slightly increased firmness in London.

In the Court of Bankruptcy, on Thursday, Mr. G. Rougemont, the foreign merchant, of Old Broad-street, who failed some months back, towards the close of the late panic, came up to pass his last examination, and receive his certificate, and for the declaration of a dividend. Proof of debts to some amount was taken, and Mr. Rougemont obtained his certificate, with the congratulation of his friends present. It will be remembered, that the object of the firm going through the court, was solely to enable the house to raise assets, which might otherwise have been lost to the creditors. The estate will realise 14s. or 15s. in 1l.

#### ACCIDENTS.

**Lady Shore Colliery.**—As S. Stranding and his son were at work in a portion of the mine in which there was a pipe for the purpose of ventilation, he, unfortunately, threw his shirt over the pipe in such a manner as to render it ineffectual. A quantity of foul air consequently accumulated, and, by the light of a candle, with which they were working, ignited, and burnt them severely. The lad is expected to recover.

**Loss of Life from Quarrying Operations.**—A large blasting operation being about to take place at St. Catherine's Bay, Jersey, on Tuesday, Mr. Dixon, the director of the works, had stated himself on the basis of the quarry, to witness the effect, but a mass of rock, weighing 5 tons, having been detached, he was precipitated to the bottom, and almost instantly killed. Mr. Dixon was about 30 years of age, and has left a wife and four children to lament his loss.—*Guernsey Star*.

**Whitwell Colliery, Newcastle.**—An explosion, attended with fatal consequences, occurred here on Saturday week; between 8 and 9 o'clock, one of the two boilers in use at the colliery was dislodged from its seat, and blown into the air, when an explosion again took place, which rent the boiler in twain—one part falling about 70, and the other about 100, yards from its place. Fortunately the boiler took a northerly direction, or the damage might have been much greater. The second boiler was driven off its seat by the force of the explosion, and the whole of the mason work displaced. Part of the working engine-house was stove in, and the roof was thrown off. The brakeman, W. Patterson, and T. Bones, who was acting as fireman, were discovered through the means of Patterson. Assistance was immediately on the spot, and they were speedily extricated. Bones was dead when taken out, and Patterson was severely scalded, burned, and bruised, and now lies in a dangerous state. M. Cook, the master blacksmith, who was examining a leak in the boiler at the time of the explosion, had his collar bone broken, and met with other casualties. R. Stephenson, the bankman, was also severely bruised about the arms, legs, and body, but is now considered out of danger.—*Newcastle Advertiser*.

**Carnarvon—Fatal Accident.**—T. Jenkins had just opened a gate to admit the trams filled with coals, which were passing down the slope to the Express mill, when, by some means, he was thrown down by the foremost tram; and, melancholy to relate, the tram passed over the unfortunate man's neck, nearly severing his head from his body.

**Dreadful Explosion on Board a Vessel laden with Steam-coal.**—An inquest was held at the Town-hall, Cardiff, on Thursday last, before R. L. Reece, Esq., coroner, on view of the body of J. Grocey, chief mate of the barque *Neptune*, of Jersey, now lying in the Bute Dock. It appeared in evidence, that the vessel above-named was loaded with steam-coal, and was lying near Mr. Powell's wharf. On Wednesday night, the deceased having lighted a lucifer match, a terrible explosion took place in the hold, by the force of which the whole of the cabin and main hatchway were blown to atoms. The captain was blown up to the height of the main rigging. The mate was killed on the spot—his remains representing a most frightful spectacle. A boy, named R. Smith, had his hands and face burnt, but not severely; and another boy had his hair and eyebrows singed. The captain and his wife, who usually slept on board, were on shore that night! The damage sustained by the vessel is estimated at 400l. Verdict—Accidental Death. [Accidents of this nature may be avoided by merely taking the precaution of keeping open the hatches for a few hours after the shipment of the cargo, that the gas, which is occasionally evolved from the Merthyr coal, may escape.]—*Sheffield Herald*.

**STONEDRIDGE IRON-WORKS.**—Last week a plate of iron was rolled at these iron-works, which weighed, when finished, 10 cwt. 2 qrs. 2 lbs., according to the weight vouched for by William Williams, the stocktaker. It was made for Messrs. C. J. Mare and Co., Orchard-yard Iron-Works, Blackwall, London, and was rolled without difficulty.



**LATEST CURRENT PRICES OF METALS.**  
LONDON, MARCH 24, 1848.

LONDON, MARCH 24, 1848.

[FROM OUR CORRESPONDENTS.]

**BIRMINGHAM, March 23.**—The trade of this town is now becoming most seriously depressed. Nearly all the foreign orders, with the exception of those from America, are being suspended, and a vast number of workmen are out of employment.

**GARTH.**—Operations in the mineral department are steadily proceeded with, and last week a few additional hands were taken on.

**THE IRON TRADE IN THE UNITED STATES.**—A correspondent of the *Birmingham Journal* writing from New York, says:—“Several failures in the iron trade in the New England States have occurred, the most important of which is that of Messrs. Pratt and Earl, of Worcester, Massachusetts; several of the works in that section are working short time. The iron manufacturers in Pennsylvania look with somewhat of alarm at the threatened state of affairs, for the present price of iron in England, and the rate of duty here, is so certain, that during the present year the iron from England will enter the interior of the United States, into places now served exclusively by American makers. Pittsburg is the chief of these, and British pig-iron can be successfully sent there if the present low rates in England continue; the American duty is 30 per cent. *ad valorem* on the returning low prices in England, will amount to about 53¢ per ton. Scotch pig was selling at \$100 per ton, and the American duty of 30 per cent. would make the cost of the foreign which, at 30 per cent., would be but \$150 cents. The old tariff of 1842 afforded a protection on bar-iron of \$25, on pig \$10 per ton, and on the smaller kinds a still higher duty. It is understood, that offers have been made by English agents to deliver in the city of Pittsburg, during the present year, not less than 10,000 tons of Scotch pigs, at \$100 per ton, and at a duty of 30 per cent. The American manufacturers of this section of all kinds equally low. In England it is sought after as ballast for shipping, and the freight to New Orleans will not exceed \$2 per ton. Up the Mississippi to the head waters of the Ohio river, it can be delivered at from \$5 to \$6 per ton, which will make the total cost less than \$25 per ton, counting the total expenses from the time of leaving England. The American duty on pig-iron is 30 per cent. *ad valorem*. The market for American iron, it must be borne in mind that the production of the United States has much increased, being, it is said, 35,000 tons more in 1847 than in 1846.

| Name of Railway.                    | Lgh. lwy. | Present ac-<br>tual cost. | Price<br>per share | Last Div. | Traffic Returns.<br>1848 | 1847  |
|-------------------------------------|-----------|---------------------------|--------------------|-----------|--------------------------|-------|
| Arbroath and Forfar.....            | 16        | £179,939                  | 25                 | 4 p. c.   | £ —                      | £ 218 |
| Brickhead, Lancashire, & Chesh.     | 13        | 706,793                   | 7                  | —         | 585                      | 498   |
| Caledonian.....                     | 150       | 3,954,470                 | 28½                | —         | 2800                     | —     |
| Dublin and Drogheda.....            | 75        | 738,655                   | 52                 | 3½        | 655                      | 702   |
| Edinburgh and Kingstown.....        | 43        | 478,818                   | 30                 | —         | 595                      | 500   |
| Dundee, Perth, & Aberdeen Junc.     | 47½       | 285,745                   | 50                 | 6         | 753                      | 273   |
| East Anglian (Lynn to Ely)....      | 55½       | 1,062,742                 | 7½ 8               | —         | —                        | —     |
| East Lancashire.....                | 24        | 1,733,915                 | 18                 | —         | —                        | 619   |
| Eastern Counties.....               | 22½       | 7,698,370                 | 13½ 2½             | 5         | 10711                    | 8892  |
| Eastern Union.....                  | 50        | 975,926                   | 80                 | —         | 1088                     | 858   |
| Edinburgh and Glasgow.....          | 53        | 2,377,745                 | 38½ 9              | 6         | 3220                     | 3327  |
| Edinburgh and Northern.....         | 71        | 1,928,007                 | 18½                | —         | —                        | —     |
| Glasgow, Paisley, and Ayr.....      | 64½       | 1,890,547                 | 85½                | 7         | 2133                     | 2339  |
| Glasgow, Paisley, & Greenock....    | 23        | 838,961                   | 16                 | 3         | 986                      | 852   |
| Gr. Southern & Western, Ireland     | 110½      | 1,876,326                 | 18                 | —         | 1979                     | 1018  |
| Great Western.....                  | 28½       | 10,970,636                | 91                 | 7         | 16664                    | 15312 |
| Kendal and Windesore.....           | 70        | 169,888                   | 23                 | —         | 118                      | —     |
| Kendal and Carlisle.....            | 104       | 1,128,193                 | 44                 | —         | —                        | —     |
| Lancashire and Yorkshire.....       | 124½      | 6,807,314                 | 66                 | 7         | 8849                     | 8180  |
| London and North Western.....       | 428       | 21,513,354                | 124 8              | 8         | 36212                    | 34966 |
| London and Blackwall.....           | 4         | 1,146,289                 | 42 5               | 1         | 692                      | 727   |
| London, Brighton, & South Coast     | 152½      | 6,087,822                 | 30 5               | 4         | 6540                     | 5305  |
| London and South-Western.....       | 66        | 5,604,164                 | 44½ 6              | 8         | 6973                     | 5977  |
| London, Brompton, and Euston.....   | 14½       | 3,624,684                 | 16                 | —         | —                        | —     |
| Manchester, Sheffield, & Lincolnsh. | 49        | 2,336,624                 | 45                 | 1         | 3068                     | 1868  |
| Marlport and Carlisle.....          | 28        | 424,417                   | 39                 | 3         | 447                      | 522   |
| Midland Company.....                | 402½      | 8,658,064                 | 98 100½            | 7         | 18064                    | 16991 |
| Midland Great Western (Irish).....  | 36½       | 383,776                   | 104                | —         | 877                      | —     |
| Newcastle and Carlisle.....         | 66½       | 1,184,080                 | 101½               | 6         | 1829                     | 2095  |
| North Devon.....                    | 81½       | 1,376,633                 | 62½ 60½            | 6         | 1577                     | 1531  |
| North British.....                  | 78        | 2,371,150                 | 50                 | —         | 1379                     | 1370  |
| Shrewsbury and Chester.....         | 17        | 591,158                   | 15½                | —         | 480                      | 331   |
| South Devon.....                    | 29        | 1,339,860                 | 20                 | —         | 926                      | 397   |
| South-Eastern.....                  | 165½      | 6,398,218                 | 23½ 1              | 6         | 7105                     | 6651  |
| Staff Vale.....                     | 38        | 785,007                   | —                  | 0½        | 1997                     | 1294  |
| Stonor.....                         | 12        | 646,211                   | 52                 | 6         | 849                      | 785   |
| Witchamton Junction.....            | 12        | 147,005                   | 6                  | —         | 173                      | —     |
| York, Newcastle, & Berwick.....     | 236½      | 3,685,102                 | 29½ 9              | 9         | 10014                    | 7832  |
| York and North Midland.....         | 230½      | 1,956,899                 | 61 4               | 10        | 7439                     | 5700  |

|                                    |      |           |       |     |      |      |
|------------------------------------|------|-----------|-------|-----|------|------|
| Namens and Boulogne.....           | 681  | 573,338   | 5½ 7½ | 4   | 1438 | —    |
| Antwerp to Ghent (monthly)....     | 31   | —         | —     | —   | —    | —    |
| Delft to Rotterdam (ditto).....    | 68   | —         | —     | —   | —    | —    |
| Schiedamschen Kanaal (ditto)....   | 57½  | —         | —     | —   | —    | 768  |
| Northern of France.....            | 211  | 2,000,000 | 2 ¾   | 4   | —    | —    |
| Bordeaux to Bourges (Central)...   | 107½ | —         | —     | —   | —    | —    |
| Paris to Tours.....                | 72   | 600,000   | 32½   | —   | 2576 | —    |
| Paris to Orleans and Clermont..... | 72   | 2,011,720 | 32½   | 12  | 2751 | 2745 |
| Paris and Rouen.....               | 93   | 2,082,916 | 32½   | 11½ | 7517 | 6941 |
| Trouwen and Harre.....             | 85   | —         | 15 ½  | 1   | —    | —    |
| Brussels and Liege (monthly)....   | 88   | —         | 6 ¼   | 1½  | 5237 | 6169 |
| West Flanders (ditto).....         | —    | —         | 1½    | 4½  | 964  | —    |

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET

WEDNESDAY.—Damon's West Hartley 15—Hasting's Hartley 15—No. Felton Mares 13 6—New Tanfield 13—Ord's Redhush 13 6—South Pontef 15—Tanfield Moor 14—Tanfield Moor Butes 12 6—Wall's End Frimwellgate 14—Hodder 14 6—Horton 14 6—Wharfedale 14 6—Eden Mares 14 6 to 15—Belmont 15 6—Bell 15 3—East Hutton 14—Hawth 16 6 to 16 9—Hetton 16 6—Keeper 16—Russell's Hutton 16—Stewart's 16 6—Hudson's Hartpool 14 9—Kelloe 15—Adeleide Tates 15 9—Cawdon Tates 14 6—Scy-mour Tates 18—West Cornforth 14—Abracrevre Stone Coal 21—Derwentwater Hartley 19 9—Howard's West Hartley Netherthorpe 18—Slingsby's Hartley 15—Shincliffe market. 190

FRIDAY.—Buddle's cat Hartley 14 6—Carr's Hartley 15—Davison's West Hartley 13—New Nelson Main 13—New Nelson 13 6—Orr's Redheugh 13 6—Tandeford Moor 14—Townley 14—Wylam 13 6—West Wylam 14—Abercraze Stone Col 21 6—Cowpen Hartley 15—Wall's Ehd Bewickes and Co, 14 6—Hedley 14 3—Braddilly's Hutton 15—Hassell 16 6—Hetton 16—Keepler 15 6—Lambton 15 6—Russell's Hutton 15 6—Shotton 13 3—Whitwell 14—Caradoc 15 6—Hartlepool 15 6—Hudson's Hartlepool 15—Heugh Hall 14 3—South Durham 14 9—Tees 16.—Ships at market, 100; gold, 99; unoid, 32.

| BRITISH MINES. |                          |       |        | BRITISH MINES—continued. |                           |       |         |
|----------------|--------------------------|-------|--------|--------------------------|---------------------------|-------|---------|
| Shares.        | Company.                 | Paid. | Price. | Shares.                  | Company.                  | Paid. | Price.  |
| 1000           | Abergwesin               | 7     | —      | 1100                     | South Dulcote             | 3     | —       |
| 512            | Alfred Consols.          | 1     | 24     | 128                      | South Carolina            | 18    | 480     |
| 1024           | Alfred Consols           | 41    | 14     | 256                      | Sth. Friarh. Wh. Ann      | 16    | 25      |
| 328            | Andrew and Nangle        | 294   | 114    | 300                      | South Harvannah           | 10    | 25      |
| 1000           | Antimony and Silver      | 5     | 5      | 256                      | South Tolgus              | 74    | 50      |
| 1634           | Barclay                  | 9     | 18     | 256                      | South Trelawney           | 20    | —       |
| 128            | Barnack                  | 35    | 23     | 128                      | South Yelland             | 164   | 30      |
| 1000           | Barnstow Iron Co.        | 3     | —      | 128                      | South Welsh Base          | 110   | 70      |
| 1000           | Barristown               | 44    | 3      | 256                      | South Wh. Belsey          | 21    | —       |
| 4000           | Bedford                  | 23    | 34     | 124                      | South Wh. France          | 160   | 210     |
| 128            | Beaure Lead Mine         | 14    | 10     | 256                      | South Wh. Hope            | —     | —       |
| 124            | Birch Tor Tin Mine       | 91    | 4      | 1000                     | South Wh. Maria           | 22    | 2       |
| 4000           | Blaenavon                | 50    | 23     | 256                      | South Welsh Rose          | 112   | 1       |
| 100            | Botalack                 | 173   | 8      | 256                      | South Wh. Sophia          | 4     | 41      |
| 128            | Brecon                   | 86    | 80     | 1000                     | Southern & Western, Irish | 2     | —       |
| 10000          | British Iron, New, Orgia | 10    | 13     | 280                      | St. Yalco                 | —     | —       |
| —              | Ditto ditto, scrip       | 10    | 10     | 256                      | St. Austell Consols       | 9     | 6       |
| 128            | Budnick Consols          | 524   | 30     | 94                       | St. Ives Consols          | —     | 320     |
| 128            | Burthly                  | 20    | 21     | 128                      | St. Michael Penkivel      | 5     | 104     |
| 100            | Buch Gruernau            | 20    | —      | 999                      | St. Minver Consols        | 1     | 6       |
| 128            | Cailestock               | 17    | 30     | 1000                     | Stray Park                | 42    | 18      |
| 1000           | Callington               | 19    | 33     | 9600                     | Tanquer Consols           | 3     | 4       |
| 20000          | Cameron's Steam Coal     | 9     | 54     | 1024                     | Tary Consols              | 4     | 7-10-12 |
| 1000           | Cannock Mine             | 94    | 2      | 6000                     | Thecroft                  | 7     | 5       |
| 256            | Caradon Mines            | 224   | 17     | 1000                     | Tolcuburn                 | 47    | 10      |
| 256            | Caradon United           | 24    | 5      | 256                      | Treanane                  | 2     | 25      |
| 256            | Caradon Wh. Hooper       | 21    | 15     | 6000                     | Treleigh Consols          | 6     | 3       |
| 1000           | Carn Brea                | 15    | 80     | 3000                     | Treanance                 | 2     | 50      |
| 3000           | Cartnew Consols          | 14    | 6      | 96                       | Tresavean                 | 10    | 210     |
| 2048           | Cascade                  | 1     | 2      | 120                      | Trethellan                | 5     | 16      |
| 112            | Charlestown              | 220   | 30     | 120                      | Trevelky and Barrier      | 180   | 125     |
| 1634           | Charlestown              | 9     | —      | 128                      | Trevelyan                 | 14    | 25      |
| 612            | Chestnut Hill            | —     | —      | 100                      | Trevelyan                 | 300   | 350     |
| 1900           | Coubmartin               | 74    | 3      | 256                      | Wellington Mines          | 15    | 25      |
| 500            | Comblawn                 | 52    | 6      | 128                      | West Basset               | 45    | 30      |
| 128            | Comfort                  | 45    | 90     | 256                      | West Caradon              | 20    | 10      |
| 256            | Condarrow                | 20    | 30     | 128                      | West Cargill              | 2     | 12      |
| 2560           | Cook's Kitchen           | 14    | 2      | 812                      | West Fowey Consols        | 40    | 15      |
| 4000           | Coombe Tin Mine          | 4     | 4-5    | 256                      | West Providence           | 9     | 25      |
| 1000           | Coombe Valley Quarry     | 24    | 34     | 200                      | West Seton                | 40    | 150     |
| 1000           | Copper Beltton           | 14    | 64     | 256                      | West of Scotland Iron Co. | 210   | 210     |
| 1024           | Coosue                   | 41    | 20     | 120                      | West Trevelyan            | 6     | 5-8     |
| 240            | Cradock Moor             | 162   | 15     | 256                      | West United Hills         | 9     | 12      |
| 128            | Creeg Braws              | 120   | 100    | 286                      | West Wh. Friendship       | 9     | 12      |
| 500            | Culbert Mine             | 124   | 15     | 3845                     | West Welsh Jewel          | 11    | 14      |
| 1000           | Cwm Erfin                | 12    | 24-3   | 2560                     | West Wh. Maria            | 3     | 1       |
| 3048           | Dartmoor Consols         | 3     | 2      | 256                      | West Wh. Shepherd         | 5     | 24      |
| 8              | D. Prior & Buckfastleigh | 14    | 26     | 256                      | West Welsh Treagus        | 214   | 6       |
| 7500           | Deneliza Mines           | —     | —      | 3000                     | Wicklow Copper            | 5     | 11-4    |
| 7000           | Dewdney                  | 2     | 3      | 128                      | Wicklow                   | 51    | 10      |
| 1024           | Devon & Courtenay Con.   | 74    | 24     | 1000                     | Wheal Agar                | 10    | 8       |
| 1024           | Devon Great Consols.     | 1     | 210-15 | 256                      | Wheal Albert              |       |         |

**MIDLAND RAILWAY STOCK.**—The number of engines—each, of course, with tender—is 160, and the average length of an engine and tender we have ascertained to be 39 ft.—making an aggregate of 6396 ft., or 2132 yards. The number of the other description of vehicles is 6816, and the average length of each, from buffer to buffer, is 18 ft. A monster train, composed of the entire number of carriages, &c., would extend over 23 miles and 416 yards; or, with the coupling-chains extended, as when travelling, a distance exceeding that from Derby to Chesterfield.—*Derby Mercury.*

**RAILWAY THROUGH A BOG.**—The portion of the Cashel Railway which subsided into the bog, it is found impossible to replace. One of the workmen has been lost in the morass. The contractor is asserted to have lost several thousand pounds by this portion, and the piles which are being sunk in order to carry the line across, are found to come up again at a long distance from the place where they were sunk.

**SOUTH WALES RAILWAY.**—We are glad to be able to report that the works upon this line in our immediate neighbourhood, as well as those of Cardiff, Swansea, &c., and towards Chepstow, are progressing very satisfactorily, every day exhibiting extension and improvement. The expansive bridge across the estuary, just above the ruins of Newport Castle, is nearly completed; the bridge towards the Caerleon-road is finished; and the embankment is fast extending towards Maindee Common, on the town side of which the line will proceed to Chepstow, over easily worked ground. The crossing of the River Wye, at Chepstow, will shortly be effected also. This will be a wooden bridge, similar to that of Newport, and will be elevated 50 ft. above high-watermark. Mr. R. R. Sharpe, a gentleman connected with extensive railway undertakings, has the contract for raising an embankment for the formation of the western abutment; and this work is rapidly proceeding. The erection of the bridge is said to have been contracted for by a Bristol merchant. The frameworks are already in a very forward state.—*Monmouthshire Mercur.*

X **St. Cleer.**—Times carried on in this neighbourhood have been the means of changing the manners and amusements of the people by introducing persons from other districts. An excellent Sunday-school library, and other institutions for disseminating knowledge, have been established, and an amateur brass band has been formed, the members of which are principally miners. On Thursday, the 16th inst., the band gave a ball to their friends at Tremar, in St. Cleer, on the occasion of one or two of the members being about to leave this country for Australia.—*West Briton.*

**INDIAN METAL MARKETS.**—*Calcutta*: Copper and lead sales rather limited; but in iron there has been considerable business doing. Steel and tin plates confined. —*Bombay*: In copper sheathing there has been a steady demand, and, consequently, an advanced price has taken place. Bolt copper is much wanted, and is a great scarcity in the market. A demand for Swedish and English iron continues. —*Madras*: For copper, iron, and lead, there is general demand, and supply limited. Tin plates rather dull.

**RING AND BRACELET COMBINED.**—Messrs. J. French and Sons, jewellers of Clerkenwell-close, have just registered under the Act a novel and ingenious design, which consists in making a ring in several annular pieces, connected to one another by hinges, and secured by a clasp, in such manner, that when folded up, a ring of unique design is formed, and, when unfolded, a very chaste and elegant bracelet. The style in which this ring is got up, cannot fail to delight and satisfy all connoisseurs in *bijouterie*.

**CHARLES DEVAUX & Co.** beg to remind the shareholders in the above company, that the CALL of SEVENTY-FIVE FRANCS per share, now reduced to 25 frs per share (less 5 frs. for interest due), making only 20 frs. per share, is PAYABLE between the 20th inst. and 6th of April next; and that C. DEVAUX & CO. will, as usual, undertake to forward the share to Paris, and pay the call thereon.

London, March 20, 1844.—No. 62 King William Street City.

CHARLES DEVAUX and Co. are, as usual, receiving the CALL on the above shares, and which has been due since the 6th instant.  
London, March 20, 1848-62, King William-street, City.

| Sold at Holguett.         |              |               |                       |  |
|---------------------------|--------------|---------------|-----------------------|--|
| <i>Mines.</i>             | <i>Tons.</i> | <i>Price.</i> | <i>Purchasers.</i>    |  |
| Maesoyrddw . . . . .      | 734          | £10 1 0       | Mather & Co.          |  |
| Cactia Llys . . . . .     | 27           | 10 0 0        | ditto                 |  |
| Milwr . . . . .           | 64           | 10 1 0        | J. P. Eytton.         |  |
| Hendre . . . . .          | 71           | 9 14 0        | Walker, Parker, & Co. |  |
| ditto . . . . .           | 183          | 9 15 0        | J. P. Eytton.         |  |
| Deep Level . . . . .      | 80           | 9 7 6         | Mather and Co.        |  |
| Frenthwog . . . . .       | 100          | 9 18 6        | Walker, Parker, & Co. |  |
| ditto . . . . .           | 10           | 7 6           | J. P. Eytton.         |  |
| Llangwrog . . . . .       | 10           | 10 0 0        | Walker, Parker, & Co. |  |
| Calnamore . . . . .       | 48           | 8 13 0        | Newton, Keates, & Co. |  |
| ditto . . . . .           | 14           | 6 6 0         | ditto                 |  |
| Shallee . . . . .         | 34           | 12 3 0        | Walker, Parker, & Co. |  |
| ditto . . . . .           | 8            | 5 5 6         | Newton, Keates, & Co. |  |
| ditto . . . . .           | 54           | 10 0 0        | Mather & Co.          |  |
| Total tons . . . . .      |              | 6094.         |                       |  |
| Sold at the Mine.         |              |               |                       |  |
| East Wheal Rose . . . . . | 84           | £12 11 0      | Tamar Company.        |  |
| ditto . . . . .           | 70           | 11 15 6       | E. Michell & Sen.     |  |
| ditto . . . . .           | 51           | 11 6 0        | ditto                 |  |
| Total tons . . . . .      |              | 208.          |                       |  |
| Sold in London.           |              |               |                       |  |
| Bwlch Consols . . . . .   | 55           | £11 7 6       | Mather & Co.          |  |
| Cubert . . . . .          | 74           | 9 5 6         | Walker, Parker, & Co. |  |
| ditto . . . . .           | 78           | 9 5 6         | R. Michell & Son.     |  |
| Total tons . . . . .      |              | 70.           |                       |  |
| Sold at Aberystwith.      |              |               |                       |  |
| Goginan . . . . .         | 70           | £13 11 6      | Newton, Keates, & Co. |  |
| ditto . . . . .           | 21           | 13 7 6        | ditto                 |  |
| ditto . . . . .           | 21           | 13 7 6        | Walker, Parker, & Co. |  |
| Fronoch . . . . .         | 28           | 9 16 3        | Hignett & Co.         |  |
| Darren . . . . .          | 15           | 13 12 6       | Walker, Parker, & Co. |  |
| Bog . . . . .             | 33           | 9 13 6        | Tamar Company.        |  |
| Total tons . . . . .      |              | 224.          |                       |  |

| Mine.             | Tons. | Price per ton. | Purchasers.                |
|-------------------|-------|----------------|----------------------------|
| Wh. Anderson..... | 24    | £35 12 6 ..    | Calenick Smelting Company. |
| ditto .....       | 14    | 40 12 6 ..     | Williams and Co.           |
| ditto .....       | 12    | 42 10 0 ..     | Calenick Smelting Co.      |
| ditto .....       | 13    | 35 0 0 ..      | ditto                      |

| Sampled March 8, and Sold at Pearce's Hotel, Tyaro, March 23, 1848. |       |         |                    |
|---|-------|---------|--------------------|
| Mines.  | Tons. | Price.  |                    |
| Devon Gt. Cons. }   | 103   | £5 17 0 | Wh. Comfort ...    |
| Wh. Josiah ... }  | 101   | 5 5 6   | ditto              |
| ditto   | 100   | 7 15 6  | ditto              |
| ditto   | 99    | 5 10 6  | ditto              |
| ditto   | 95    | 6 2 0   | Foldice ...        |
| ditto   | 46    | 8 0 0   | ditto              |
| Wh. Maria ...   | 28    | 5 5 0   | ditto              |
| ditto   | 127   | 5 9 0   | ditto              |
| ditto   | 126   | 6 10 0  | ditto              |
| Wh. Fanny ...   | 135   | 5 0 0   | Wh. Friendship ... |
| ditto   | 134   | 5 0 0   | ditto              |
| ditto   | 37    | 5 5 0   | ditto              |
| ditto   | 14    | 5 13 0  | Wh. Jewel ...      |
| Wh. Anna Maria  | 92    | 5 14 6  | ditto              |
| ditto   | 26    | 6 4 0   | ditto              |
| West Caradon ...  | 88    | 6 0 6   | ditto              |
| ditto   | 76    | 6 0 6   | Bedford United ... |
| ditto   | 60    | 4 4 6   | Wh. Maiden ...     |
| ditto   | 59    | 7 0 6   | Wh. Williams ...   |
| ditto   | 51    | 9 1 0   | Wh. Henry ...      |
| Fowey Consols ...   | 94    | 6 0 0   | Wh. Union ...      |
| ditto   | 88    | 6 1 0   | Todd's Regulus ... |
| ditto   | 73    | 5 16 6  | Pembroke ...       |

|                 |        |             |           |                |     |     |            |
|-----------------|--------|-------------|-----------|----------------|-----|-----|------------|
| Devon Gt. Cons. |        |             |           | Wh. Friendship | 234 | ... | £1888 17 0 |
| Wm. Josiah      | } 1254 | { £790 12 0 |           | Wm. Jewel      | 146 | ... | £49 4 6    |
| Wm. Maria       |        |             |           | Dodard Unad.   | 117 | ... | \$357 6    |
| Fanny           |        |             |           | Wm. Maiden     | ... | ... | £31 15 0   |
| Wm. Anna Maria  |        |             |           | Wh. Williams   | 31  | ... | 185 0      |
| West Caradon    | 327    | ...         | 2068 9 0  | Wm. Henry      | 27  | ... | 149 17 0   |
| Pewsey Consols  | 255    | ...         | 1821 12 6 | Wheel Union    | 7   | ... | 42 3 6     |
| Wm. Comfort     | 244    | ...         | 2654 17 6 | Regulus        | 5   | ... | 53 2 8     |
| Folidice        | 240    | ...         | 1145 6 0  | Pembroke       | 1   | ... | 5 6 0      |

|                                | Tons.        | Amount.           |
|--------------------------------|--------------|-------------------|
| Mines Royal .....              | 324          | 2,195 5 0         |
| Vivian and Sons .....          | 185          | 4717 9 0          |
| Fresman and Co. ....           | 100          | 1,000 0 0         |
| P. Grenfell and Sons .....     | 362          | 1,905 3 3         |
| Crown Copper Company .....     | 47           | 294 8 6           |
| Slims, Williams, and Co. ....  | 530          | 3,255 14 0        |
| Williams, Foster, and Co. .... | 676          | 4,667 0 6         |
| <b>Total Tons .....</b>        | <b>2,922</b> | <b>17,923 3 6</b> |

Copper ores for sale on Thursday next, at the Royal Hotel, Truro.—Mines and Parcels.—Consols 1009—United Mines 832—Tresavon 408—South Canadian 157—Par Consols 347—Perran St. George and Boilema 333—Trevelyan 239—Trelhelian 183—St. Ann and Granbier 167—Twelvetrig Consols 146—Wheal Sisters 135—Wheal Elion 112—Wheal Andrew and Nangles 100—Wheal Clifford 92—Wheal Mary 68—Wheal Grudance 57—Wh. Brewer 45—Wheal Agar (East) 29—Rose-in-Vale Consols 15—Glenmaena 14—Charlestown United 13—Ting Tang 12.—Total, 4852 tons.

Copper ores for sale on Thursday week, at White's Hotel, Pool.—Mines and Parcels.—North Pool 884—Wheal Section 770—Tincroft 601—East Wheal Crofty 572—Camborne Vein 536—Dolcoath 365—Fowey Consols 261—South Wheal Basset 254—Conduvor 238—Wheal South Francis 168—East Pool 143—Wheal Bucketts 132—Wheal Mary 65—South Wheal Fortune 68—Lantrev Consols 42—Wheal Tryphena 16—Wheal Rose 12—Polgrog 11—West Basset 16—Copper Bottom 8.—Total, 6080 tons.



## NOTICES TO CORRESPONDENTS.

It will at all times save much trouble, and frequently considerable delay, if communications are simply directed—  
TO THE EDITOR,  
Mining Journal Office,  
26, FLEET-STREET, LONDON.

Also, to avoid trouble, Post-Office Orders should always be made payable to WILLIAM SALMON MANSFIELD, as acting for the proprietors.

\* We should feel obliged to all purveyors, captains, or adventurers, to forward particulars of meetings, &c., of the mines with which they may be connected, on the earliest opportunity, that they may be published in the Journal with as little delay as possible.

## Glossary of Mining Terms.

We are preparing for publication, as a neat pocket volume, our Glossary of English and Foreign Mining and Smelting Terms. The new edition will comprise several corrections in the Cornish Terms; also, the additions with which we have since been favoured by correspondents—comprising those of South Staffordshire and Newcastle.

Some remarks on the Employment of Slave Labour in Foreign Mines, must stand over.

"J. T. W." (Nantyglo).—See Mitchell's *Manual of Practical Assaying*; or Budge's *Mining Guide*—Weale, 59, High Holborn.

"R. M." (Glasgow).—Apply to the author, whose address is given in the notice.

"T. K." (Bideford).—The report can be procured of Messrs. Hansard, Turnstile, Holborn—price 3s.

"A Shareholder."—See a notice in this day's Journal; also a report of, and remarks on the last meeting, in those of the 12th and 19th February.

THE COST-BOOK SYSTEM.—Some observations, in reference to a remark in last week's Journal, as also the letter of a correspondent, are unavoidably postponed.

METAL TRADERS' PENSION SOCIETY.—We are compelled to defer, until next Journal, our report of the meeting of the supporters of this society, held at the London Tavern, on Thursday last.

"W. Z. S." (City).—Mr. Hoffmann's pamphlet is published by J. Miller, Henrietta-street, Covent-garden.

Insertions, Improvements, and Practice of a Colliery Engineer.—We have just been informed, that Mr. Thompson has reduced the price of his work from 7s. 6d. to 4s.—at which rate copies can be had at our office, or from Mr. Weale, 59, High Holborn.

We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses; not that their communications should, consequently, be noticed, but as an earnest of us of their good faith.

THE MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

## THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, MARCH 25, 1848.

It is not permitted to us to take anything more than a commercial notice of the extraordinary political transformations, which are, at this moment, changing the whole face of the European world; nor, perhaps, is it desirable that we should do so—for the comfort, the wealth, the prosperity of nations, is far less intimately connected with merely political fluctuations, which may happen to all, than with the growth and perpetuation of that commerce, which is the permanent foundation of public ease and happiness. There is a natural order in the progression of social benefits, which cannot, except most injuriously, be reversed, or interrupted. Thus industry is everywhere the nursery and supporting element of commerce; commerce, in its turn, is the fruitful underberd in which wealth, in every place, takes root; wealth, next in order, is the parent stem of knowledge; and knowledge the only atmosphere in which freedom can adequately breathe. In this manner we lay in the lower arts, and in the diligence of mechanical occupation, the first sections of that column, upon whose uplifted head, crowned with capital and architecture, is traced in golden portraiture the duties by which life is adorned, and the labours by which true liberty is perpetuated. It is quite as well, we say, therefore, that we do not soar with PLATO to the heaven of the most perfect, or the most fair. That our business is infinitely less with the ideal and the imaginative, than with the tangible and the concrete—less, in fact, with theories of Government and Legislation, than with that pound of practical activity which constitutes the happiness, and secures the peace of the busy world. Since our last publication, the public funds have become firmer, and gone up several quotations, arising, we believe, principally from the fact, that the settled policy of the British Government will be pacific, whatever commotions may heave the Governments of the continent from their foundations. Hostilities, on our part, will be an absolutely last resource—in the strictest and most literal sense—or *ultimo ratio*, if, indeed, under any circumstances, it would be adopted at all. The changes in the mining world, and value of mining property, have been few and unimportant. We believe there is a somewhat better demand for the leading ones, and also a somewhat increased supply, so that the general value of mining produce has continued steady, under circumstances of depression in other departments of home industry. The inquiry for shares in those mines, which, for some time past, have been declaring a frequent and a handsome dividend, has been numerous. The same may be said of mining shares generally as an investment, and there can be little doubt that it will lead to large and important transfers. Altogether, looking at the state of trade as a whole, the upward motion of the public funds, the fulness of the money market, the partial revival of commerce, and the growing conviction that the amicable relations of the European nations will not be interrupted, we are inclined to regard the week just ended as having given us a cheerful earnest of a prosperous future.

The financial and commercial affairs of France have, since our last publication, absorbed all other considerations; and, to meet the exigencies of the day, the Provisional Government will leave little for the National Assembly to do, except to ratify their Acts, previous to the elections; and, as in this third revolution, France is in the hands of the Parisians, the elections, according to present appearances, are not likely to interfere with this dictation. One of the measures decided upon by the Provisional Government is, to purchase from the respective companies all the railways commenced, or to be completed, in France; and the energy with which these works are to be carried on, can hardly be kept pace with by the supply of iron made in France. In addition to the announcements of the Minister of Marine, for the supply of English coal, the working of events in France may lead to contracts likewise for British iron, unless the progress in the railways to be purchased from the present proprietors in French *rentes*, is to be limited to the making of earth-works.

Leaving France to manage her financial, commercial, and political affairs in her own way, we pass, with considerable gratification, to notice the events in Germany; and the important concessions made by the KING OF PRUSSIA and EMPEROR OF AUSTRIA, cannot fail to produce the most beneficial results—not only to that part of the continent of Europe, but likewise in its connection with England. On receipt of the information at Milan, of the EMPEROR OF AUSTRIA having granted the promised constitution, after the retirement of PRINCE METTERNICH, the viceroy departed from that city. The constitution of 1812, has been conceded to the Sicilians by the KING OF NAPLES; and advices from Rome, to the 18th inst., reports a proclamation had appeared of a new fundamental constitution by his Holiness POPE PIUS IX.—consequently, in the past week, the political atmosphere is brighter; and the views expressed in this Journal of reaction in securities, depressed at the outbreak in France, is, as we have before remarked, beginning to show itself in the improvements in the funds and augmented purchases in railway shares—the French lines participating in the improvement.

It was solely, from a pressure of other subjects last week, that we did not more particularly direct the attention of our readers to the important experiments now being made, as to the kind and quality of fuel best adapted for the generation of steam, as applied to mo-

otive-power. It is obviously not altogether, nor even principally, a mining question, though in that relation alone, the subject is highly important. It is more important still, in relation to the iron districts, and the manufacturing seats of the kingdom. Of still greater moment is it to the great and growing railway interests, which penetrate into every nook of this busy island; but, surpassing all, it is of the highest consideration to the royal, mercantile, and mail navies of England, whose keel furrows every sea, and whose meteor flag illuminates every breeze. Regarding the subject of these experiments in these multiplied relations, it is not so easy either to write or speak beyond the actual and intrinsic magnitude of the results involved. The experiments will, we have every reason to believe, elucidate three principal points—viz.: the greatest concentration of fuel, the greatest economy, and the greatest procurable amount of heat; and, with a view to the settlement of these desiderata, it does not appear to be very important, whether the furnaces consuming the fuel are either fixed or floating. These islands, as every one knows, contain within their circuit some of the richest coal measures in the known world, and discoveries are daily making, of important coal deposits, in the magnificent colonies and continental dependencies of this great sovereignty. We are in a state of profound peace—there is no war, civil, European, or beyond the seas, at present claiming our attention, or absorbing our resources; but the times are critical beyond all precedent, and it strictly behoves us, in all things, to put our house in order, and to live in a state of preparation for those hostile contingencies, which we must be blind not to see, and insane not to regard. These investigations are entrusted to individuals eminent in their department of the scientific world, and it is not too much to expect, that from them will issue a report as to the most powerful and economical fuel for furnace work generally, which shall afford solid instruction, on that head, to the mining, manufacturing, and maritime interests of this great kingdom.

By the end of next week, we hope we shall have received from our friends, spread throughout the mining districts, the fullest returns which it is in their power to furnish of the gross produce of the mines, falling within their notice and observation, during the first quarter of 1848. It would materially enrich, and raise the importance of these returns, if, superadded to the account of produce, we are enabled to publish also an account of the expenditure of the mines, and the value in sterling money of the ores sold during the quarter.

As we have intimated before, the collection and presentation of these statements is properly and legitimately the business of parties resident upon, or in the vicinity of, the works. We hope there are parties so situated, who will cheerfully contribute to this good and promising, and necessary work. The public ought to see that there is nothing to conceal, nothing to mystify, in mining operations as now conducted. If there were any latent frauds, any subtle falsification, in the course and character of mining business, the policy of such publication might be questionable; but in a case where, if anywhere throughout the world, mining affairs receive a perfectly honest, and a thoroughly able, administration, the want and the absence of an enlarged and authorised exposition of its progress and success, is, we cannot but persuade ourselves, both injurious and inexcusable.

To present the public with these returns in a tabular form, and in a manner which shall be at once concise and comprehensive, is a work to which we shall gladly devote a portion of our time, and of the space of this Journal; but the returns themselves must originate in the mining homesteads of England; and especially we expect them to flow up from the counties of Devon and Cornwall. We do not see—nor have we ever seen—any sufficient reason why the mining public should not have submitted to it quarterly a statement of the progress and the proceeds of that particular branch of industry, which is the subject matter of their investments, with the same regularity and precision with which the larger public expects the quarterly account of the revenue of the State. With this last word or two—we leave the whole case to the judgment and industry of those who are able to furnish the accounts.

Our attention has been called, by several inquiries, to a leading article which appeared in our last week's Journal. The mine to which we then referred is situated nearer Camborne than Liskeard; and, although we have been informed that large sums of money, amounting in the aggregate to upwards of 1000*l.*, has been neglected to have been brought forward and charged, or never named to the adventurers at the meetings held on the mine near Liskeard, we did not advert to that mine in particular, but to the negligence generally (to use the mildest term) of pursuers, in whom the most implicit confidence is relied on by the adventurers. In reference to the financial management of the mine now alluded to, we have some doubt as to the personal responsibility the pursuer has rendered himself liable, by the gross negligence manifested in the matter. And, as a general meeting will be held shortly, when we trust that all outstanding liabilities will be brought forward, we think it but justice to all parties concerned, that no prejudicial feelings should be excited by *ex parte* statements before an explanation be afforded. Our making any reference to the matter at all, is to correct, as well as to expose, abuses; especially when distant shareholders are precluded from personally investigating the periodical accounts of those in whom the greatest confidence is placed.

GOVERNMENT CONTRACT FOR COALS.—In addition to the contract for 5000 tons of coals last week for Malta, the commissioners concluded a contract on Thursday last, the 23d inst., for delivering into the Royal Clarence victualling yard, at Gosport, 1000 tons of Welsh coals (hand-picked Bryndorway, Llangennech, and Graigola), half to be delivered by the 30th of June, and the remainder by the 31st of August next; also, for supplying the Royal Marine Barracks, at Deptford, and the Royal Marine Barracks and Infirmary, at Woolwich, Chatham, Portsmouth, and Plymouth, with all such coals of one or other of the following sorts, as shall from time to time be demanded, between the 1st of April next and the 31st of March, 1849:—Deptford, Woolwich, and Chatham: Lambton's or Stuart's, Hetton's or Russell's, Hetton's Wall's End, Portsmouth: Lambton's, Stewart's, or Hetton's—Plymouth: Russell's High Main, or Usworth's and Stobart's, or Springwell's Wall's End. As usual, there was strong competition.

THE RYECROFT MINE, STAFFORDSHIRE—ALLEGED IMPROPER WORKING.—In the Rolls Court, on Thursday, Mr. Turner, with whom was Mr. Amphlett, applied to the Court, upon notice, for an injunction to restrain Thomas Forrester from working a mine called the Rycroft Mine, situated at Walsall, in the county of Stafford, in such a way, as to leave a portion of the seam of coal under that which he was getting, and also to prevent him from working the mine other than in a workmanlike manner. In September, 1838, Samuel Smith, the owner of the mine in question, granted a lease of the mine to Thos. Forrester, for 50 years, in pursuance of a previous agreement. This lease contained a power to work the mine, with power to remove the coal, &c.; it also reserved various royalties to the plaintiff, and empowered him to inspect the books. The seam of coal is called the four-yard coal, being the average breadth of the seam, and it slopes from the surface into the earth. The defendant had sunk a shaft about 34 ft.—one-half the depth of the seam—and he took out only about two yards of the coal, leaving about two yards underneath unworked—so that the water flows over the two yards unworked, and the earth and rubbish fell in, and prevented its being worked. The defendant had no machinery to remove the water, but calculated upon the drainage of neighbouring mines. These facts were verified by several mining agents. The defendant had been served with notice of this application, but he refused to appear.—Lord Langdale granted the injunction, as asked, but gave the defendant permission to move to dissolve the injunction on this day week, without further notice.

ALLEGED FRAUDULENT WORKING OF COAL.—At the late Stafford Assizes, two true bills were found against Messrs. Salter and Raybould, for felony, in getting the mines belonging to Mr. Caddick, solicitor, of West Bromwich. The case will be tried in London.

BRIGHTON RAILWAY.—We understand that the reduction already made in the working expenses of the two items, in the locomotive and carriage departments, will this half-year be some 16,000*l.* In the year, it is highly probable that the reductions altogether will reach 35,000*l.*, or more.—*Brighton Gazette.*

SOUTH DEVON ATMOSPHERIC RAILWAY.—The atmospheric system is not yet perfect. The London mail arrived at Totnes an hour after time on Sunday morning, owing to some mishap between Exeter and Newton.—*West of England Conservative.*

## PROGRESS OF FRENCH MINING INDUSTRY.

(FROM OUR PARIS CORRESPONDENT.)

Commercial matters still continue in a deplorable state. Many failures have taken place, more than one expected, and suspension of business becomes every day more general. Among the failures are two or three in the iron trade—not the manufacturers of iron, but firms which stand between them and the retail dealers. One of these firms was of considerable importance and long standing in Paris. But do not suppose from these misfortunes that a statement, which appeared the other day in the *Morning Chronicle*, to the effect, that the commercial crisis was making serious ravages in the metal trade, was true. The metal trade has been, and, perhaps, will be, effected by the tremendous convulsion of February. How, indeed, could it hope to escape altogether? But it has not been, and will not be, affected to anything like the same extent—anything like the same proportion—as every other trade. Of all trades—all branches of commercial enterprise in this country—those of the production and sale of metals are, without question, the richest, the most firmly established, the best adapted to resist any shock, even such a terrific shock as that from which France is now suffering. I told you, in the first letter that I wrote after the revolution, that metallurgical interests would suffer less than any other. Thus far, the result has proved the correctness of my assertion—for not only have all the great iron-works, in different parts of the kingdom, continued their usual operations, but we have only heard of two, or, at the most, three failures, which, though not without importance in themselves, are still not sufficiently extensive to cause injury to the whole trade. This, surely, is a consoling fact, when we call to mind that upwards of 25 banking-houses in Paris—some of them leading ones—have been obliged either to suspend payment, or to wind-up business, and when scores of firms in every department of commerce have been laid low.

Every day's reflection and experience confirms one in the opinion, that it would be imprudent for persons having capital invested in the metallurgical establishments of this country to allow themselves to be carried away by the panic, and to sell out at once. By so doing, they would sustain an immense loss—that is certain; but, by waiting, as I have said before, they have the chance of things turning out well; and, at all events, come what may, they can hardly ever be in a worse position than they are now. Will things turn out well? Why should they not? Think on what the last week has produced—an insurrection at Vienna—an insurrection at Berlin—insurrections all over Germany. Add to this the news received this morning of an insurrection at Milan. Now, these insurrections remove at once the danger of foreign war. It was only Austria and Prussia that would ever have thought of picking a quarrel with France; but how can they do so now when their own people are rising against them? There is also Russia, it is true, which might not be indisposed to come to blows; but, to reach France, she would have to fight her way through Germany—and that is an enterprise which assuredly she will never be mad enough to think of undertaking. We shall, therefore, have no war—that is certain. I perceive, however, that some croakers in the daily journals, prognosticate that, by not reducing her army, and by increasing the National Guard, and by forming the Garde Mobile, France must mean to attack. With due respect to the gentlemen who write in the daily press, I think they take a very narrow and very false view of the position of France. For how could she have thought of reducing her army immediately after the revolution, especially when she knew not that she might not have three of the great powers of Europe attacking her at the same time? How could she refrain from increasing the National Guard, when her revolution proclaimed the equality of all citizens? And what was she to do with all the poor, ragged, and hungry wretches, who were swarming in the streets, except to form them into a Garde Mobile—the best way in the world of clothing and feeding them, of preventing them from doing mischief, and of rendering them useful? Besides this, why should she think of making war, when her finances are already insufficient for her wants, and when all her people, with scarcely a single exception, protest against war? If she goes to war at all, it will be an unjust war; and that will set all Europe against her. Depend upon it that her rulers are not such madmen as to place her in such a dangerous position.

There being, then, no likelihood of war, the only danger which remains is that of domestic anarchy. On this subject it is impossible to speak with equal confidence. On the one hand, the people appear admirably disposed—a universal desire exists to see a new constitution adopted, and with it a strong Government; on the other hand, we have an awful commercial crisis, the Government is reduced to desperate expedients to raise money, specie is disappearing, confidence all but annihilated. Yet, on the whole, perhaps, there is more ground for hope than for despondency. But whatever is to happen, I still cling to the conviction, that the best thing your readers have to do is, for the present at least, to leave their money where it is, and to be assured that the interests in which they are embarked are, and will be, less endangered than any other. Nay, some people are so sanguine as to believe that they would rather profit than otherwise by internal commotion; but this is going too far.

Strange as it may appear, it is, nevertheless, a fact that, even at this period, so terrible to business speculations, there are people who broach new commercial enterprises. One of these sanguine mortals has brought me the prospectus of a company, which he is endeavouring to form, for establishing some iron-works near Bordeaux, and has earnestly begged for a recommendation to English capitalists, being convinced, as all speculators are, that his scheme would lead to certain fortune. I tried hard to persuade the man that, at such a time as this is, no Englishman would be lunatic enough to place money in any undertaking in France, however promising it may appear; but there was no convincing him. The readers of the *Mining Journal*, however, will not need a recommendation to abstain from all new investments in such troubled times as these.

Notwithstanding the great excitement which prevails, it is gratifying to find that the Free Trade Association does not lose sight of its high and sacred mission. It not only spares no effort to enlighten the public, by means of newspapers, placards, and discussions, but it has been up to the Provisional Government to recommend the adoption of its principles, at least in so far as regards the food of the people. In the reply which M. Marrast made, in the name of the Government, he seemed to think that the Government had neither the power nor the right to interfere with such grave questions at such a moment; but he promised that the observations of the free-traders should receive attention.—*Paris, Thursday.*

BELGIUM.—The general annual meeting of the Grande Montagne, which had been called for on the 31st inst., has been postponed to the 30th April. It is to be held at Liege.

The workmen of the establishment of Cockerill, at Liege, recently struck work, in consequence of having been informed that the day's labour would be reduced, and the rate of pay would also be reduced. They assembled in a body, in the town, when they were addressed by the mayor. It was only, however, on being promised that the rate of pay should not be reduced, that they consented to resume work. They consented to a reduction to three-fourths in the day's labour, on being told that the commercial crisis rendered it indispensable.

The Government will shortly receive contracts for a large supply of rails, chairs, &c., for the different railways.

AUSTRALIAN COAL.—In the course of an examination before a Select Committee of the Legislative Council of New South Wales, the Rev. W. Bramwhite Clerk, a Fellow of the Geological Society of London, gave it as his opinion, that there exists, in New South Wales, an ample supply of coal for all the uses of the colony. In Newcastle, U.S., the seams of coal are 19 ft. thick, and, in Illawarra, about 10 ft. Mr. Clerk calculates that, in the Newcastle (U.S.) district alone, the available supply on 8 square miles is equal to 27,000 tons annually for 700 years. He thinks that coal would not be found in Ceylon—which is composed exclusively of granite and gneiss; but that it would be found in other islands of the Indian Archipelago—as it occurs in Borneo. Steam navigation from Australia may be assisted by coal found at Talmahono, south of Valparaiso; and also in the Upallatra ranges of the Cordillera; and he expects that it would be detected in the mountains of the same great chain to the eastward of Copiapo. Coal is found abundantly in New Zealand, and in Kerguelen's Land. Mr. Clerk has communicated the detailed results of his investigations to the Geological Society; and no doubt these will appear in their *Transactions*. In a country where the climate is so mild, and wood so plentiful, as in New South Wales, it is only when coal-mines are found sufficiently near to rivers and sea-ports to be sold at a moderate rate, for steam-boats, that they will be much valued in this generation.



# MEETING OF THE VIEILLE MONTAGNE SHAREHOLDERS IN PARIS—SUSPENSION OF PAYMENTS BY THE COMPANY.

A very numerous meeting of the shareholders of the Vieille Montagne was held in Paris, last Saturday evening.

The CHAIRMAN gave an account of the past operations of the company, and then proceeded to explain its present position. He said that, from the extensive business of the company, the directors had been under the necessity of incurring very considerable expenses for new buildings, furnaces, &c. This had rendered the raising of a loan necessary, and this loan was in the course of being raised in Belgium when the revolution broke out. From the crisis thereby created, it was doubted whether any reasonable hope of obtaining the loan could now be entertained. The position of the company, up to that day, was—liabilities, 3,200,000 fr.; assets, including stocks, bills, &c., 5,690,000 fr. But it was impossible, at that moment, to realize the stock; and if the sums due to the company should not be paid, it would not be able to meet its engagements. Some extraordinary resources must thereby be created; but if the worst should arrive, the company could avail itself of the privilege of the Belgian law, which, before declaring companies in bankruptcy, allows a year's time, provided their assets exceed their liabilities. The directors had been negotiating in England for a loan of 2,000,000 fr. (80,000 £), but there was now no chance that it would be realised.

A SHAREHOLDER suggested, that if security could be given, the English would, perhaps, advance money.

The DIRECTORS replied, that there was not the slightest hope of that; the English had even refused to make advances on security of stock actually on board ship. The directors added, that even if the English were better disposed to assist them, it was always a matter of considerable time to raise a loan. Now, their necessities were immediate, as it so happened that the greater part of the bills they had given fall due in April—whereas the bills due to the company do not become due until May. If the revolution had broken out in that month, or in June, it would have done comparatively little injury to the company. The debtors to the company were all substantial men—in fact, the metal trade was the most solid of any in France, and always fulfilled its engagements. It was probable, that the company would sustain no eventual loss; but, in consequence of the crisis, they must be prepared to expect demands for renewals of their bills.

A SHAREHOLDER said, that as there was no hope of obtaining a loan in England, the best way was to stop at once. Another shareholder suggested, that the creditors of the company should be asked for time. A third proposed the creation of new shares, depositing stock as security for advances made on them. A fourth recommended, that the shareholders themselves should make advances.

Some lengthened conversation took place on these different propositions. In the course of it, the directors spoke with great confidence of the eventual prosperity of the company. Even should they lose the French market, which, perhaps, was not to be expected, they were still certain of an extensive sale for their products in England and America. At length the meeting broke up, without any formal resolution being come to, but with the understanding, that the directors would do what was best for the interests of the company.

Our correspondent, writing on Thursday afternoon, says—"The directors have decided on temporarily suspending their payments. In a circular which they have issued, they state that they are willing to place an account of their affairs before their creditors, leaving the latter the alternative of deciding whether they will accept a renewal of their bills for six months—the interest thereon being paid in advance—or whether they will receive their demands in obligations—that is, virtually turn their debts into a loan to the company."

"The Vieille Montagne shares were done at the Bourse, on Thursday, at 205 fr., being 50 fr. more than on the previous day. Before the revolution, the shares were as high as 5540 fr."

The treaty of peace between Mexico and the United States, for which the latter is to pay 5,000,000 £ sterling, is likely to lead to the most beneficial results to the development of mining enterprise in that portion of the New World. The Mexicans are naturally an indolent class of people, and their great mineral resources are worked by English companies, who, unfortunately, have confined themselves to the old mines of the Spaniards, nearly exhausted, instead of exploring new ones; but the occupation of New Mexico by the troops of the United States, will give an impetus to the formation of adventuring speculators to work the well known riches of that district, which will undoubtedly prove most lucrative to the parties. Mexico may be justly called the mineral kingdom of the New World; but, in consequence of the intestine contentions of military chiefs to assume the Government, the mining industry has been nearly neglected, and confined to British enterprise; but a new era is now arising for the country thus acceded to the United States, by the treaty, extending from the Atlantic to the Pacific. The grand object of the Congress, at Washington, has for years been to unite the above oceans by a navigable ship-canal; but, through jealousy of other powers, and not being masters of the territory, it has hitherto been defeated by the various projects of cutting a canal across the Isthmus of Panama and Tehuantepec, neither of which have yet been carried out; indeed it may seem impracticable for a canal, but a railway would answer well, and no doubt, will ultimately be accomplished, and thus throw open a short transit, and give a great impetus to the development of mining enterprise in Chili, Peru, and the whole of the western coast of South America, by the facilities now afforded by the South Pacific Steam Navigation Company, and the Royal West India Mail Company; whilst, on the northern territory of New Mexico, in all probability, ere long, the Americans will have a canal; which will be highly advantageous, not only to their own commercial intercourse with the Pacific, India, and China, but that of England, and other European nations,

CONTRACTS FOR COALS FOR THE FRENCH STEAM-NAVY.—The Provisional Government of France is turning its special attention to the present state of the national navy, and particularly the steam-vessels. The greatest activity prevails in all the arsenals and dockyards—Brest, Cherbourg, La Rochelle, Quimper, l'Orient, Bayonne, and Toulon, where a strong squadron is ready to put to sea at a moment's notice. The machinery and boilers of all the steam-ships are undergoing a thorough inspection, and what repairs or improvements requisite to be made are to be executed immediately. In addition to the 2500 tons of English coal to be contracted for, to be delivered at Gorea, and 1200 tons at St. Louis, Senegal, for the service of the steam-vessels cruising off the coast of Western Africa for the suppression of the slave trade, conjointly with England, a contract of 6,000,000 kilos (58,579 tons) are to be adjudicated for on the 29th inst., at l'Orient, for the navy. The Government has also announced, that it will be ready to treat with parties for 15,000,000 kilos, of English coal, on the 22d April next, at Toulon. This demand for coal, and that British, has caused no little jealousy on the part of the great coal mine (or monopolist) proprietors of the Loire, as it proves to them that their basins cannot furnish it of the quality suitable for steam navigation—a fact they were well convinced of before; but, through the intrigues of the officials during the late Government, for the supply of the Marine Department, they thought the whole of the trade was in their hands, and that no alteration would be made in the tariff as to the importation of English and Belgian coal and iron at a reduced duty. They are, however, now satisfied that the present changes in France must lead to quite a different system of international intercourse with the other European powers and those of the New World; and, consequently, the projected revival of the Custom Laws strikes terror to the monopolists.

CAES STONE QUARRIES, FRANCE.—We are sorry to learn, that 200 Englishmen have been discharged from these works alone. The expulsion of English workmen from France, will be attended with a complete overthrow of all the French mechanical industry, and, consequently, England must, ultimately, benefit from these rash proceedings of our "fraternising" neighbours.

ENGLISH COPPER MINERS' COMPANY.—A meeting of holders of debentures of the Company of Copper Miners in England, was held at their offices, on Monday last. The committee appointed at the previous meeting, to investigate the state of the company's affairs, comprised five parties, only two of whom, however, have engaged to act. They had not proceeded sufficiently far with the investigation to enable them to report specifically, but enough escaped to lead to the melancholy conclusion, that there will not be a single farthing left for the holders of the company's debentures.

PATENT GALVANIZED IRON COMPANY.—In the House of Commons last night, Mr. Brotherton moved that leave be given to withdraw the petitions of John Chevallier Cobbold (presented 28th February), and of Henry Pattison (presented 1st March), against the Patent Galvanized Iron Company (Incorporation of Company, with powers to hold lands to raise money, by loan, and to purchase Letters Patent) Bill. That leave be given to withdraw the petitions of John Chevallier Cobbold (presented 28th February), and of Henry Pattison (presented 1st March), against the Patent Galvanized Iron Company, trading under the style or firm of "Malins and Rawlinsons" Bill.—The motion was agreed to.

## EXPERIMENTS ON COAL—OFFICIAL REPORT.—No. III.

PENTREFELIN COAL.—This coal is obtained near to the village, and in the parish, of Llangavelech, and is generally known by the name of the Clydrie, or 5-ft. vein, and is worked at a depth from the surface of about 350 ft. The seam is 4 ft. thick, and very regular throughout. The character of the subjacent stratum appears to be a soft under-cliff, with 5 ft. of cliff over the coal, covered by a thick bed of hard sandstone. The dip of the bed is 34 in. in 1 yard; the direction 130° S.W. It is a free burning coal, and is used chiefly at the copper smelting-works in Swansea. The price through, and through to the copper-works is 41s. 6d. per 11 tons, being about 3s. 9d. per ton; if shipped as culm, the present price is 4s. 6d. The coal lies considerably north, and verges on the stone-coal district; it makes very good culm for lime-burning. The sample of coal sent had been very loosely packed; and, being of a soft character, had become reduced into very small pieces, some even into a coarse powder. It has an indistinct fibrous structure, with numerous horizontal plates of shaly matter, and also of a soft dark-coloured friable substance, chiefly along the line of bedding. A large part of the coal is made up of rectangular masses, which break up with a smooth, though not very bright, fracture. It is, however, a clean-looking coal, with but small quantities either of white substance or of iron pyrites. Our remarks during the trials show that, owing to the extreme smallness of the coal, there was great difficulty both in lighting the fire and in getting the steam up; the same cause, no doubt, affected the trials throughout, as the work done was very small in comparison with that of other coals. As the fire burnt up, a distinct hissing noise was heard; and, on opening the fire-door, large quantities of ignited particles, presenting a bright scintillating appearance, were carried over the fire-bridge, and passed into the flues. On stoking the fire, a considerable quantity of unburnt coal slipped through the bars, which, on being again thrown up, increased the difficulty of getting a good fire. The quantity of cinders and ashes left were consequently very large.

DUFFRYN COAL.—The Duffryn steam-coal is called the 4-ft. vein, and is obtained in the valley of Aberdare, near Merthyr, in the county of Glamorgan. The depth of the pit is 285 ft., and the thickness of the vein is generally about 6 ft. It is worked in the form of stall and heading; the small and refuse is cast back, or gobbled in the stalls and waste; the large coal is filled into waggons, containing about 1 ton each, and conveyed from the stalls or heading to the top of the pit. The overlying stratum is strong clod or rock, and the subjacent stratum is strong fire-clay and rock. The dip of the vein is 1 in 9, or 4 in. in 1 yard, and crops towards the north. It is described as a free burning coal; and its principal markets are London, Liverpool, Southampton, Dublin, and Plymouth. The distance from the colliery to Cardiff, the shipping port, is 22 miles, to which there is conveyance by both railroad and canal. No current price is given in the return, which states "that the coal has been shipped largely to the West Indies, under contract with the Government for steam purposes, and has also been sent to the Mediterranean and America, and has given much satisfaction." This is a coal of rather a soft description, easily broken up into small pieces, with a bright appearance of fracture, but which is somewhat obscured by the apparent irregularity of its structure. It contains a considerable proportion of a white substance, but no iron pyrites were observed in it. Some portions of the coal, where the structure is well seen, show the lines of fibrous structure perpendicular to the planes of deposition or bedding. Numerous very thin layers of a soft brownish substance are seen along the line of bedding. Our remarks during the trials show, that it kindles very readily and burns freely, raising the steam with great rapidity. It makes a remarkably clean fire, without any smoke, opening well on the bars without caking. No clinkers were made; the ashes and cinders left were clean, and of a whitish colour.

OLDCASTLE FIERY VEIN.—This coal is obtained close to the sea-side, within half a mile of the town of Llanelly, and is worked at a depth from the surface of about 336 ft. The seam is 2 ft. 6 in. in thickness, and very regular throughout. The overlying stratum is strong rock, and the subjacent strong fire-clay. The dip of the seam is 4 in. in 1 yard, in a north and south direction; the strike of the bedding being east and west. The coal is of a bituminous character, and is worked nearly half large. The colliery is situated about 1 mile from the shipping port (Llanelly). The present market price is 6s. 6d. per ton as worked, and 9s. per ton for hand-picked large. England, Ireland, and France furnish the principal markets for the coal. The sample of this coal has a dull lustrous appearance, similar to that of plumbeous. It is a soft coal, with an imperfect fibrous structure, inclined at about 45° to the planes of deposition, and contains very little pyrites or white matter. It breaks up readily into masses, having flat surfaces with irregular angles. We remarked during the trial that, as soon as the fire burnt up, and a high heat was obtained, a series of explosions, more or less loud, were heard throughout the day; being more frequent when fresh coal was thrown on, and gradually diminishing, both in intensity and frequency, as the coal was consumed. The fire was readily kindled and burnt well, making but little smoke or dirt. On the fire the coal swells up, immediately, opens well, and cakes just enough to hold the small pieces together, without obstructing the passage of air through the bars.

WARDS FIERY VEIN.—This colliery is situated about 1½ mile from the town of Llanelly, and 2½ miles from Loughor. The seam is 5 ft. thick, and very regular, and is worked at a depth of 425 ft. from the surface. The strike is east and west, and rises north and south. The bottom stone is soft, the top a shaly blue stone, with a small quantity of iron-stone mixed. It has the character of a free burning coal, and works very large. The colliery is about 3 miles from the port of Llanelly. The present current price is 6s. 3d. per ton as worked, and 9s. per ton for hand-picked. The principal markets are in England. This is a soft coal of a bright appearance, with a distinct fibrous structure, the fibrous structure, inclined at about 45° to the planes of deposition, at an angle of about 45° across the planes of deposition; it appears to break very readily. Very little pyrites or white matter were seen in the sample of coal sent to us. Our remarks during the trials are, that the fire was readily kindled, and that, during the whole period of the experiments, a hissing noise was distinctly heard in the fire, similar to that produced by throwing up wetted cinders or coals. The proportion of clinkers was rather large, and of a reddish colour, containing much shale.

BINEA COAL.—This coal is obtained on Binea Farm, near Loughor-bridge, in the county of Glamorgan, and is known as the Binea, or Loughor Fiery Vein. It is worked by ordinary means, at a depth of about 440 ft., and the seam is 2 ft. 6 in. thick, from the surface. The average thickness is about 4 ft., and the vein runs very regular, lying between strata of strong blue stone. It is but very slightly inclined. It is called a free burning coal, and appears to be used for locomotive and marine engines in the neighbouring ports and railways; large quantities are also sold in Ireland. The current price is 10s. per ton for large, and 7s. for the mixed and small. The colliery is about 3 miles from the port of Llanelly. The sample of coal furnished had a bright appearance, with some surfaces distinctly fibrous, and very irregular, apparently made up of rectangular masses, separated by numerous thin layers of shaly matter. It is a soft coal, and contains but a very small quantity of pyrites or white matter. The surfaces of deposition are well marked, and average about three-quarters of an inch apart. The lines of fibrous structure have an inclination of about 45° to the surface of deposition. The only remarks made during the trials are, that both the cinders and the ashes left were of a reddish colour, and contained a large proportion of shaly matter, which, on being moved, broke down into a fine powder. No clinkers were found either on the bars or in the ash-pit.

LLANGENECH COAL.—These coals have rather a dull appearance, are soft, and have a structure almost wholly fibrous, and contain minute quantities of iron pyrites, and but little of the nature of the natural surface of the coal renders them easily reduced to powder (possibly this is the cause of their dull appearance). They appear to have a great disposition to break up into oblique angled masses: the fracture across the fibrous structure resembles that of antimony, only the grain is much coarser. Small thin plates of shaly matter occasionally occur, but of a very small size in general. The remarks made during the trials are, that the ashes, cinders, and clinkers were of a reddish colour, containing much white and shaly matter; the clinkers were very thin, and when removed from the fire-bars and thrown on the fire, they were again burnt through with some difficulty. On treating the white matter of the clinker with acid hydrochloric, a strong odour of sulphuretted hydrogen was given out. They burnt very readily in a common house grate, leaving a lighter coloured ash.

MYNYDD NEWYDD.—This coal is generally known by the name of the Ponnylla, or 5-ft. vein, and is mined near Cadley, in the parish of Llangavelech. The vein varies from 5 ft. to 7 ft. in thickness, and is worked at a depth of 306 ft. from the surface. The subjacent stratum is composed of soft cliff roof for 8 fms., with sandstone over. The inclination of the vein is 8 in. in 1 yard, and the direction 60° S.W. The coal is of a very bituminous character, and is used for household purposes generally, and also at the copper smelting-works at Swansea, where the current price is about 5s. 6d. for the small, and 7s. 6d. per ton for the screened and shipping. It is much esteemed for house purposes, being considered very free from sulphur. The sample of coal sent to us for trial was of a small size, having been badly packed, and moved about from several places. It appeared, however, to be a moderately hard coal, of a compact structure, with an irregular fracture. The mass seemed to be made up of slightly rounded surfaces, with a fine fibrous structure, the cross section of which presented a finely mottled appearance. The brown fibrous matter, so frequently met with, was found in small quantities, but no pyrites or white matter were seen. The remarks at the trials were, that, owing to the smallness of the coals, they caked immediately on the fire, causing much smoke, and delaying the generation of steam. On moving the fire, much unburnt coal ran through the fire-bars, and fell into the ash-pit. The proportions of clinkers, cinders, and ashes, were very considerable.

THREE-QUARTER ROCK VEIN.—This is known as the three-quarter vein, and is situated near to the Varteg Iron Company's Works. It is obtained at a depth of from 210 ft. to 240 ft. from the surface; and the vein runs from 4 to 5 ft. in thickness, and is worked in stalls and pillars. The subjacent and overlying strata are clunch, ironstone, ball, clay, rock, and ironstone. The dip is 34 in. in 1 yard, in a westerly direction. The character of the coal is free burning, with a pure white ash, containing little sulphur, and working large. The colliery is 1½ miles from the shipping port (Newport); the principal markets are the East and West Indies, Brazil, Africa, and the Mediterranean ports, and the present price current is 9s. 6d. per ton. This coal has a dull appearance, and is of a firm compact character, splitting readily along the bedding, which is often defined by layers of a soft brown matter. It breaks up very irregularly, the pieces are small, of a cubical shape with flat surfaces. The joints appear to be at right angles with the plane of deposition, and contains large quantities of pyrites, and a white substance of a hard, semi-crystalline appearance, which, on being examined, proved to consist chiefly of silica, with lime, magnesia, and traces of sulphur. The mass of the coal is composed of thin plates of coal, alternating with plates of shale. The sample, when received by us, seemed to have been exposed to rain, as the coal was in a very wet state. Our remarks during the trials were, that the fire kindled freely, but required a strong draught, making much smoke at first of a dense black nature, which, as the fire burnt up in the course of the day, assumed a reddish-brown tint. It caked quickly on the fire, and coked easily on a dead plate; much sooty matter was deposited on the top of the dead plate, and also in thin leaves adhering to the top of the fire-grate. The cinders and ashes, when thrown up, burnt well. The proportions of residua, ash, cinders, clinkers, and soot, were rather large. In a common fire grate it burnt well, leaving a light-coloured ash.

GRIGOLA COAL.—This coal is known as the Grigola coal, and is obtained at Grigola, on the eastern side of the river Tawe, about 6 miles from Swansea. It is the hardest of the under coal, and in the face of the slope; the object being to get as great a proportion as possible of large coal. The seams are worked by level, and are about 5 ft. 9 in. in thickness, running very regular; both the under and overlying strata being a hard and solid sandstone. The inclination is about 3 in. in 1 yard, or 1 in 12, with a north rise. The coal is described as a free burning coal, with little smoke or sulphur. The current price is 10s. per ton for large hand-picked; the small is 3s. 6d. per ton. The principal markets are London, Mediterranean, Africa, Jamaica, and the various stations both at home and abroad. The coal appears to be used for making coke in open pits, and when mixed with a proportion of bituminous coal, is well adapted for smelting, &c. The coal is of a soft character, tolerably bright appearance, and apparently fibrous structure, the lines being often inclined so as to form irregular cone-shaped masses, the general inclination being about 45° to the plane of deposition. Irregular patches of a soft brown substance are seen generally along the line of the bedding, with thin layers of shaly nature. In the sample sent, no pyrites were observed, and but a very small quantity of whitish matter in the interior. Our remarks during the trials were, that the fire kindled easily, and burnt well, though we had some trouble at first, owing to the small size of the coal. It had been very badly packed, and having been removed several times, its natural softness had caused it to separate into very small pieces. On the fire, the coal opens up well, but is apt to split into small pieces, which fall on the bars, and stop up the current of air,

and, if moved, fall through to the ash-pit. It seemed best to use pieces of a moderate size, and to leave them on the fire without much smoking. The ashes, cinders, and clinkers, were in considerable quantity, and of a very small size and reddish colour; the clinker being mixed up with scoria and dirt of a friable description. In a common grate it burnt well, leaving but very little ash.

[To be continued in next week's Mining Journal.]

## Original Correspondence.

### ON THE USE OF ANTHRACITE COAL—THE STEAM NAVY.

SIR,—In the Journal of the 11th inst., there appears an excellent article, headed "Experiments on Coal—Steam-Navy Economy," which I read with great satisfaction. I beg leave to recall to your recollection the fact, that this subject is by no means a new one for your columns. It is now many years since I recommended, through their medium, the use of anthracite coal as fuel for first-class steam-ships. Your valuable Journal is entitled to the credit of having first directed attention to the subject of economising fuel for steam navigation. I trust that now the importance of your periodical is fully appreciated. Conducted upon the principle of allowing free discussion on a certain class of subjects, it affords to the more humble and inexperienced an opportunity of publishing occasionally a crude idea to be taken up, and improved upon, by more experienced and talented individuals—leading, ultimately, to the adoption of plans embracing matters of national importance. I have always entertained the idea, that anthracite coal would, at some period, be used on board the Government steam-ships; it possesses so many advantages. The reason why it has not as yet been used, is, simply, because it requires a different mode of treatment to produce full effect to that in use for bituminous or free-burning coal. Anthracite coal, certainly, be burnt on common grates, and with the ordinary draft of a chimney; but, with equal bulk of boilers, steam can never be generated so rapidly in that way by anthracite as by bituminous or free-burning coal. But the adoption of the plan of working the boilers of marine engines by blast, will at once obviate every difficulty in burning anthracite—while it will be attended with many advantages besides. In my opinion, perfect combustion can be attained only by means of a blast. In boisterous weather, a blast must be much more certain and steady than the draft of a funnel. Prejudices against its use may, and I know do, exist; but these must be quickly dispelled. Any objections to its practical working are too frivolous to be long entertained by a liberal and enlightened body of officials.

In advocating the use of anthracite as fuel, it must be borne in mind, that I confine myself to the largest class of steam-vessels. A separate engine should be used for the blast, which in such cannot be any objection—that is, not commensurate with the advantages of an improved mode of firing, and the use of anthracite coal. Should the plan of a separate engine, to work a blast for the fires of marine engines, be hereafter entertained, I am prepared with a new form of fire-place and boiler, quite on the locomotive principle—a complete tubular boiler—with which, and anthracite for fuel, I have no hesitation in stating my firm conviction, that, for a given term of service, the bulk of boilers, and the bulk of fuel, might be reduced to little more than one-half what they are at present on board the Government, and other large steam-ships, which would enable these to steam for a much greater distance than they can now, without calling in at some depot for a fresh supply of fuel.

The remarks in the article to which I referred, at the commencement of this letter, are so just and pertinent, that further comment on my part would be needless to point out the great importance of this subject. For many years I have devoted my humble ability, and the small means I possessed, to this subject—the more extensive use of anthracite—regarding it as a fuel of great value, and possessing some very peculiar properties, more especially for treating metals and the volatile products of some ores—as sulphur, arsenic, and zinc—the total absence of all gas, or volatile matter, that might interfere with these, being a great advantage. For smelting iron, anthracite, unquestionably, would be a powerful fuel, if its peculiarities were understood and properly directed, which is, at present, far from being the case—the poorest veins only being made use of. These contain about 20 per cent. of ash, or earthy impurity, by my simple mode of analysis, which is by exposing the coal in fine powder to a red heat in an iron ladle as long as any combustible matter remains. This poor coal holds together better than the richer veins, which shiver to pieces when suddenly heated, as the coal is now on being thrown into the burning gases at the open tops of the furnaces—and thus choking up the furnaces with small dust. I have subjected the ash of the *dragaged*, or black vein, to further trials, and found a large proportion soluble in a solution of caustic potash, proving it to be alumina. This poor vein of coal may prove of value on that account, by furnishing alumina to ores containing a great excess of silica. No attention is paid by the ironmasters generally to the composition of the various veins of mine or ironstone, from the universal want of chemical knowledge; this is ridiculed by all parties engaged in smelting iron, and looked upon as visionary. For my part, I regard this neglect as one, amongst some others, of the causes of the disappointments, uncertainty, and loss, which has attended so many of the iron speculations in the anthracite district of South Wales. My reason for supposing that anthracite would, if properly made use of, prove very valuable for smelting iron, is founded on the fact, that iron so smelted is found to be the best for working into sheets for tin plates. I regard iron in this form as the nearest approximation to the pure metal; and, consequently, that anthracite iron must be purer than other pig-iron. Some old ironmasters, to whom I have been endeavouring to explain my ideas of working iron, have expressed themselves as puzzled to comprehend the meaning of the phrase I have frequently used—viz: that of iron in its pure metallic state. Iron is one of the metals; but as pig or bar-iron, or as steel, it is not a simple body. These are all compounds. Having hazarded a few remarks upon iron, I doubt not but they will elicit others from more able contributors to your valuable paper, which may give me an opportunity of explaining my views more fully. At present, I fear I have already trespassed too much upon your space.—T. H. LEIGHTON: Cwmamnon, March 18.

### SIR,—I wrote a letter, last week, on the use of anthracite coal, to which

I am now induced to add a few further remarks, in consequence of reading, in the *Mining Journal* of the 18th inst., a continuation of the interesting paper, "Experiments on Coal—Steam-Navy Economy." The gentlemen, who have conducted these experiments, observe very justly "that the true practical value of coals for steam purposes depends upon a combination of qualities;" and they sum these up under six heads, or conditions, remarking, that "it never happens that all these are united in one coal." They then refer to anthracite, giving it full credit for many valuable properties; but conclude with the remark, "it has disadvantages which, under ordinary circumstances, preclude its use." This is so far just. In my former letter, I state the necessity of using a blast to produce full effect with this fuel; but omitted to mention the use of steam, or vapour of water, as an essential part of the principle which I have long advocated. On this occasion, I speak of a general principle—not of any particular mode of application. By this departure from ordinary circumstances, anthracite would be put in possession of all the requisite conditions set forth in the report, and would prove superior to any artificial or compound fuel. First, in point of gravity—space on board a steamer being valuable—according to the table of the component parts of the fuels tried, anthracite is 1.375; Warlich patent fuel is 1.15—thus, into a space where 1375 tons of anthracite could be stowed, 1150 tons only of Warlich fuel would fill it. The addition of vapour of water to anthracite, supplies the properties of the most favourite steam-coal—the most rapid generation of steam, but free from the objection of smoke—while the general arrangement, converting the great fixed or local heat into gaseous or volatile heat, ensures the total consumption of the fuel, without loss by smoke, unconsumed gas, or half-burnt coal, and prevents the injury to iron which might arise, if the highly-ignited coal were in contact without the passage of steam through it. The proportion of water to the coal, which I recommend, is about one-half. Thus taking 100 lbs. of anthracite, and adding to it 50 lbs. of the elements of water, we alter the component parts, given in the table referred to, thus—carbon, 69.96; hydrogen, 6; nitrogen, 14; sulphur, .53; oxygen, 31.93; ash, 1.02 = 100—closely resembling the composition of some of the most free-burning, or splint coal. Now, if we add to the 1375 tons of anthracite 687, we have 2062 tons of ordinary steam-coal in the bulk of anthracite, equal to 1150 of Warlich patent fuel.

In order to show you the power of anthracite to resist the effects of weather, warmth, moisture, and variations of temperature, I will send you small parcels of specimens—one of coal, long exposed to the weather; another of coal which has passed through a blast-furnace, smelting iron; and



another of mine, left exposed to all weathers for 10 years to my knowledge: how much longer, I know not.  
Cwmaman, March 21.

T. H. LEIGHTON.

#### RECENT DISCOVERIES IN ELECTRICITY.

SIR,—In reply to the article of Dr. Murray, recorded in your Journal of Saturday, I wish to be understood that, as I am deeply interested in the progress and development of electrical science, I have no disposition to leave the track of our previous argument, for the purpose of entering into any disquisition upon philological niceties. Nevertheless, I cannot allow it to be supposed, that I acquiesce in the validity of your correspondent's opening observation, that I have "failed to recognise the legitimate sense of the term theory." I, therefore, subjoin a few pertinent remarks, which I have endeavoured to confine within the strict limits of polite controversy. If a man speaks to me of a "proposed theory," I certainly do not understand him to be talking of any established fact; yet such was the expression of Dr. Murray, and such appears to have been the meaning which he intended to convey. (Vide *Mining Journal*, March 4 and 18.) Moreover, he refers to Lord Bacon, and lays it down as the maxim of this illustrious author, that "a theory must be founded on facts, and spring from them." Granted; and so must a house be built upon a foundation; but such subordinate dependence does not constitute identity. Theory is not merely "systematised facts"—it is something beyond this; and the views of others seem to correspond with my own.

"Your theories are here to practice brought,  
As in mechanic operations wrought."—DETDEN.

"Now, theory is a general collection of inferences drawn from facts, and condensed into principles."—FAIR: *Sequel to a Printed Paper*.

"Weary with the pursuit of academical studies, he (Collins) no longer confined himself to the search of theoretical knowledge; but commenced, the scholar of humanity, to study Nature in her works, and man in society."—LANGHORNE: *On Collins' Ode*—"The Manners."

For my own part, I can form no other idea of the meaning of this word, than as being an expression for a speculative conjecture founded upon facts—a conjecture which seeks to collect these facts into one focus, and to exhibit them as the natural or probable results of some common principle, real or imaginary, in order that apparent complexities may be simplified to the understanding; and that the mind, grasping the chain of connection so established, may be led on to form logical conclusions, terminating in the extension of experimental truth.

There is, and can be, but one true explanation of the *modus operandi* of Nature; yet we have two or more theories for almost every branch of natural knowledge. How is this? In the science of heat, we have the material theory, and the vibratory theory. In that of light, we have the theory of projected corpuscles, and that of undulations. The phenomena of electricity are referred by some to the theory of Franklin; by others to that of Dufay. There are the contact and the chemical theories, for the explanation of voltaic phenomena—while magnetism boasts the theories of Æpinus, Poisson, and Ampère; but I will not multiply examples. Does your correspondent require authority? Let him refer to the writings of Herschel, Brewster, Barlow, Rojet, &c., &c.; but the doctor himself appears to be afterwards dubious of the stability of his own inferences, and inclined, as he says, to lean to the logic of Leibig—that even what we esteem facts, have to do with present, rather than future, knowledge.

The real and true difference between theory and hypothesis is this, that the latter, unlike the former, is not grounded upon facts. It is a pure creation of the mind, unbased upon any previous demonstration, or axiomatic truth—a flimsy, unsubstantial fabrication. An edifice, moulded by untrammelled thought, and which, like the dove in the deluge, can find no resting-place. If theories were truly and solely the systematic exposition of facts, they would be but the embodiment of Truth itself, and, therefore, eternal; but they are human inventions, and, consequently, subject to overthrow. They may be, and are, most useful and ingenious representations of reality, enjoying a period of popularity in proportion to their relative excellence; but time wears on—new facts are discovered—some fatal flaw makes its appearance in each beautiful structure—and, one by one, they vanish, and melt into thin air, like the attendant spirits of Prospero. How truly does the experience of the past confirm this affirmation! I now turn for a moment to the after part of Dr. Murray's letter. It would appear, that poor Mr. Crosse, like Frankenstein, has created a monster for the destruction of his own quietude. Engaged in the harmless and philosophical endeavour to eliminate crystals of silica at the anode of a water battery, he was greatly surprised, in the course of his experiment, to perceive the gradual and unexpected development of an extraordinary insect; and what rendered the phenomena yet more remarkable was, that it proved, upon examination, to be a species of the genus *acarus*, which had never before been observed. The singular experiment was repeated again and again with invariable success, notwithstanding that every precaution was taken to ensure the purity of the electrolyte, and the cleanliness of the apparatus employed. Fire, and water, and salts, and acids, and all things inimical to animal life, were found incapable of preventing the appearance of the mysterious stranger. He was developed in poisonous solutions and in soluble glass; and Mr. Crosse, struck with the singularity thus adventitiously presented to his notice, acted as any other man would have acted under similar circumstances, and mentioned these strange facts to other parties; but his experiments were no sooner published to the world, than he was assailed as a promoter of heterodox opinions, and a reviver of the old doctrine of spontaneous generation—a proceeding most unjust to himself, and detrimental to science. It was unjust to himself, because, by his own declaration, he had never formed an opinion as to the origin of these insects; or, if he had one, it was that they arose from ova, deposited by insects floating in the atmosphere, which might possibly be hatched by the electric action. It was detrimental to science, inasmuch as it may prevent others from giving to the world the results of their labours, until they have first considered how unequivocal truth is likely to be received by existing opinion.

It is scarcely fair to denounce the declaration of a new fact as atheistical in its tendency, because we are unable to understand it. We should never forget that "there are more things in heaven and earth than are dreamt of in our philosophy;" and, considering on the one hand the littleness of human wisdom, and the immensity of human ignorance on the other, it is no supreme act of humility or forbearance in a case of this kind to admit the reality of an asserted and demonstrable fact, and acknowledge our inability to grapple with it.

In conclusion, and with an anxiety to redirect the current of argument, into its original channel, I should feel obliged to your correspondent, if he would afford me some further information concerning certain statements contained in his first letter, and dated Feb. 26, especially the division and subdivision of an original charge among a number of various sized jars—an experiment made by himself in former years, and allied, in his opinion, to the phenomena under consideration—viz.: the development of intensity in accumulated electricity. I confess I am unable to trace the alliance, except as between two separate and unconnected facts, comprehended under one physical system; and it is more than probable that the mistake, if it be so, has originated rather in the garbled character of the information upon which Dr. Murray's reasoning was founded, than in any error of his own judgment—however, it is possible that further explanation may clear the mystery up, and elicit some spark of truth, some scintillation of novelty on one side or the other.—ISHAM BAGGS: *London*, March 22.

#### ORIGIN OF COAL.

SIR,—I must view the genius of the pamphlet on this subject in a far different light to that which it is your pleasure to entertain of it. *Nemo mortalium omnibus horis sapit*, is here, between author and critic, beautifully exemplified. Although I cannot agree with "Carbonicus" that vegetable debris underwent a charring action ere it was entombed in appointed graves, yet must I also disagree with his critic, in his hypercriticalism on this assertion, and by the counter assertion, that coal does not contain an atom either of sulphuretted or carburetted hydrogen, or tar, or yet of ammonia, as such, but merely bodies by whose igneous decomposition and resolution the elements of these new compounds are nascent. Our analysis of coal runs thus: In place of so much carbon, hydrogen, azote, oxygen, and accidentals.—1. A resinoid, non-azotised matter, analogous to amber, with free carbon, resulting, probably, from the amylaceous and laneous spores, immingled, as in asphaltum.—2. A resinoid-azotised matter, analogous to indigo in constitution; but in one class of coals of a brown colour, as in the Bovey coal—in another class of a blue colour, as in the pithy, or coking, coal—and, in other varieties, a variable mixture of the two. With these, the true constituents of coal are blent, ferruginous and arsenical pyrites, siliceous and aluminous matters, together with, in some cases, the components of sea-water, even to traces of iodine and bromine, selenium and potash.—W. RADLEY, *Ch. E.: Cloak-lane, City*, March 20.

#### A UNIVERSAL DELUGE.—DR. MURRAY AND D. GERARD.

SIR,—Your excellent correspondent, Dr. Murray, in last week's *Journal*, states, that D. Gerard "met with a bed of fossil oysters, at an elevation of 16,000 ft. above the Indian Ocean, among the Himalaya range, in the eastern hemisphere." As I possess specimens of these fossils, collected by this celebrated traveller, I beg to observe that, although, to use the language of D. Gerard, they are "marine shells, resembling oysters;" they are not "fossil oysters," but belong to a genus closely allied to *productus*, and which I have named *Strophalosia Gerardi*, in a paper of mine, published in the *Annals of Natural History*, vol. xviii., pp. 93-94. From the way in which these so-called "fossil oysters" are introduced by your correspondent, it might be inferred, that they belong to a late geological period, and are supportive of "a universal deluge." I may observe, however, that they are true Palæozoic fossils, probably belonging to the carboniferous, or the Permian epoch, and have, therefore, no bearing on the diluvial question. As D. Gerard's account, wherein these shells are mentioned, is not generally known, and as it is descriptive of one of the grandest geological phenomena on record, I have availed myself of the opportunity of transcribing it for your columns. I am the more induced to do this from the conviction, that the mining profession (of which the *Mining Journal* is a valuable representative) can only be safely pursued when based on an extensive knowledge of geology.—W. KING: *North of England Museum of Scientific and Economic Geology, Newcastle-on-Tyne*, March 20.

"The geological structure of the Spété district commands a high degree of interest from its numerous fossil remains, and the irregular elevation and magnitude of the scenes which represent them—the mountains, in many places, appearing to be formed entirely of shells and their exuvie. Specimens of these fossils have been sent by me to Calcutta, where, no doubt, they will have been duly appreciated and elucidated by those who are more conversant than myself with the subject of fossil conology. Some of the fragments were broken from masses of rock, lying at the foot of a cliff; from which they appeared to be detached, at a height of 15,000 ft. The cliff rose like a wall abruptly from the river, but its eastern side sloped off from a crest 16,500 ft. high, where some ammonites\* were found. Illness, and the languor produced by such an attenuated atmosphere, prevented my taking every advantage of my visit to this interesting region, and my journey was terminated by the limits of the British territory. Just before crossing the boundary of Ladakh and Bashahr, I was gratified by the discovery of a bed of marine shells, resembling oysters, and clinging to a rock in a similar manner; but the suspicions of the Chinese prevented my bringing away many specimens. The loftiest position at which I actually picked up some of the shells was on the crest of a pass, elevated 17,000 ft., where also were seen numerous blocks of calcareo-siliceous matrix. I was not able to pass more than a single day at this interesting spot, but I brought away numerous fragments of the rock."—*Asiatic Researches of the Bengal Society*, vol. xviii.

\* I possess two species of these ammonites, one of which bears a close resemblance to the *A. elegans*, so common in the porassic rocks of Yorkshire and elsewhere.

#### LEATHER, RINGING STONES, &c.

SIR,—The allusion to a patent taken out for the manufacture of leather in a former Number of your *Journal*, reminds me of a plan I once recommended for impregnating the pelt with tannin. The skins were enclosed in boxes or cylinders, made air-tight; steam occupied the space, and, by an injection of cold water, a vacuum was formed, which was subsequently filled with the tanning ooze: by this simple arrangement the hides were impregnated immediately and completely, on the principle by which quicksilver is forced into the pores of wood, by the rush of air into the attenuated medium of the air-pump—the wood being immersed in quicksilver. I also found that leather was best "bloomed," as it is termed, by the use of oatmeal; and a tanner, many years ago, employed this method in the blooming of the leather he sent to Leadenhall market.

In the paragraph in your last, referring to the "musical stones" near Pottstown, U.S., it is stated, "no such phenomena is to be found in any other part of the world." Permit me, however, to remind you, that the "ringing stone" in the Island of Mull, in the Hebrides of Scotland, is precisely similar, and equally remarkable.

The words, "employed his time to much better purpose than in hatching mites," should have been in inverted commas, being the inference and words of the Editor of the *Morning Herald*.

I beg to add, once for all, I must decline noticing, in any way, whatever comments or remarks my generalised view of the geological evidence of "a universal deluge" may elicit.

Portland-place, Hull, March 21.

#### NEW TELEGRAPH.—MAGNETISED RAY OF LIGHT.

SIR,—I had the pleasure of witnessing a few experiments performed a short time since, by which rays of light were magnetised—the discovery of the celebrated chemist, Dr. Faraday. The effect produced on the ray when transmitted through a concentrated lens, placed between the poles of an electro-magnet, with a powerful galvanic battery applied, was as follows:—The ray of light thus transmitted appears to be deflected by the influence of electricity, precisely in the same manner as the magnetic needle, with this exception, that a greater galvanic power is required for the former. I am led to imagine, that a ray of light thus magnetised, will, ere long, supersede the use of the magnetic needle in conveying telegraphic signals. The power of galvanism, as applied in this case, is certainly so enormous, as to constitute an objection; yet, as almost every day brings to light some new discoveries in the application of galvanism, this objection will, doubtless, be obviated sooner or later. It must be borne in mind, that from the time when Prof. Oersted first discovered the electro-magnetic meridian (from which the electro-magnetic telegraph derives its name), until the present period of its perfection, many years have elapsed. Should any of our electricians succeed in equalising the expense of deflecting the magnetised ray of light with that of deflecting the magnetic needle, such a discovery would materially tend towards the construction of a perfect telegraph—one, at least, which would be far more certain in its action than we find it to be at present under the use of the needle.—G. SHEPHERD, *C.E.: Fleet-street*, March 16.

#### THE RIVER DEE RAILWAY BRIDGE.

RESPECTED FRIEND,—The discussion which has lately taken place in the Legislature, in respect to the crazy cast-iron bridge across the Dee, proves—firstly, that this structure is nearly in the same state as it was six months ago; and, secondly, that travellers have no predilection for having their heads broken, or for the most remote prospect of such an adventure; and as no one has proposed a plan for constructing a bridge in this locality, which would be sufficiently strong to permit the trains being driven at a high speed, without danger of running at a still greater speed in a perpendicular direction, I may be allowed to suggest an improved mode of constructing railway bridges. It will be, of course, essential that the "eminent engineers" pronounce the principle sound, previous to its being adopted; and, as they would not, probably, wish to do so, unless the invention was to be considered as their own, they may make some slight modification, as usual, in its form and mode of placing the structure in its position; after which, they may have the chance of its being pronounced a bold piece of railway engineering—the inventor being sent about his business, should he have any other to attend; the necessity of which will, in fact, be apparent even at first thought.

The plan which I beg to propose, through the medium of thy columns, consists in combining iron and timber, in such a manner as to render the destruction of the bridge next to an impossibility. I would, firstly, rivet a number of sheets of iron together, so as to form an immense sheet, about 5 ft. wide, and of a length equal to the span of the bridge; on each side of this plate I would fasten a number of timber beams—the longest that could be procured—in such a manner, as to avoid two sets of beams having the joints at the ends opposite one another—so that they would be placed on each side of the plate in a position somewhat similar to stones in building a thick wall; they would be firmly bolted together, and to the iron plate—so that it would be impossible for one to give way, unless the whole were to break; it would be, in fact, a huge bundle of rods, with an iron plate in the centre—each rod being a Canadian pine (by the way, it would not be constructed in the kingdom of Lilliput!) This mass of timber being sloped perfectly round, so as to resemble a huge column turned on the lathe, I would wind a bar of iron round it in a spiral direction—this bar being sunk in a groove previously formed—all round the whole length; after which, I would construct a wrought-iron tube around it, so as to completely encase the mass of timber.

The principle which I propose will be now evident. The direction and number of beams required, would depend on the length of span—thus, in most cases, two such beams would be sufficient; but, if for a great length

of span, four might be required. I would place an elastic platform on the top—such as has been already described in the *Mining Journal*. I may here explain, that the section of each beam would be a tube, divided in two equal parts, by an iron plate, placed on edge in the line of the transverse section, and these two parts filled with timber. It might be worth the attention of the professors, who have already experimented on the strength of wrought-iron tubes, to ascertain the amount of weight and concussion they would bear; and I am confident that the weight and hammering which they would bear, would be infinitely greater than if constructed of any other form, with the same weight of materials; but should they make these experiments, it is to be hoped that the result will not be published until the whole would be completed, so as to avoid two contrary opinions being given—leaving the public to guess which is the right one.  
Liverpool, 3 mo. 21.

JOHN DE LA HAYE.

#### PRESERVATION OF RAILWAY VIADUCTS—ASPHALTE.

RESPECTED FRIEND,—About nine months since a letter of mine was published in thy columns, on the destruction of railway viaducts, by allowing the rain to penetrate through the brickwork—a defect, which I suggested might be obviated by covering the arches with asphalt, and on which my friend, George Shepherd, C.E., stated that this plan was adopted on the railways in Austria. It seems, however, that in England, where all great discoveries in mechanical science have originated, this simple mode of preventing disastrous accidents is rejected; and thus, in spite of dearly-bought experience, we frequently hear of viaducts falling just after being completed; the old tale is then again brought to light—there was no defect whatever in the structure, but the heavy rain, &c. Now, possibly, the engineers imagine that asphalt is a very costly substance, and that to rebuild a viaduct a second or third time is the most economical plan—if so, it might be worth while the secretary of the Asphalt Company taking the trouble of sending a circular to the engineers of the different railways, stating the price per pound, and the allowance made on taking a ton. There may be, however, some difficulty in discovering who are the responsible parties, as the directors may throw the responsibility on the engineer, the engineer on the contractors, and the contractors on everybody; yet I would suppose that the engineer engages to see the works completed in an effectual and economical manner. Some time since, Sir John Rennie, in a speech at the Institution of Civil Engineers, stated, that the engineers of England were well known for their "eminence and probity;" but many of them will have to keep a sharp look out, if they think these qualities of any value, or worth the trouble of retaining.  
Liverpool, 3 mo. 21.

JOHN DE LA HAYE.

#### REFORM OF THE PATENT LAWS.

RESPECTED FRIEND,—I observe, with great pleasure, that Mr. Campin is about to call the attention of the Legislature to the present state of the Patent Laws—laws so defective, that in a vast number of cases, they can afford no protection to inventors. In the first place, the enormous expense attending the grant, prevents the greatest number of inventors from applying for protection; secondly, the comparatively small number of years during which the protection extends, frequently renders the law a dead letter, as many important inventions are not generally adopted until the expiration of the patent—witness Witty's oscillating engine; and, thirdly, the expensive mode of obtaining redress for infringement of patent right, renders it no easy matter for an inventor to avoid seeing his inventions pirated. It seems strange, indeed, that England, which owes so much to the progress of science, should be behind every other country in affording protection to inventors—peer or journeyman. I have lately received several letters from inventors from among the latter class, both from Liverpool and from other parts of the country, requesting me to advise them as to the mode by which they can bring out their inventions with advantage to themselves and to the public; but, of course, their only plan, if they study their own interests, is to abandon their inventions altogether, as the law virtually says, that persons who have no property have no right to invent; or that, if they trouble themselves about inventing, any individual may plunder them of the fruit of their researches. Yet a vast number of inventors have no property; for those who study science, for its own sake, seldom accumulate fortunes; or, in other words, individuals who have the perceptive and reflective organs strongly developed, have seldom the organs of acquisitiveness large—the former being the intellectual organs, and the latter the animal; these facts are well known to phrenologists. Thus it is that many rich blockheads arrive at "eminence," merely by having the latter organ as large as all the others together. Principle being sacrificed to avarice, the original inventor has been plundered; and then, by means of the wealth which their baseness purchased, have sought for impunity for their dishonesty. If it be true, that there is "a good time coming," it is to be hoped that it will be a time when the inventors themselves, and not pirates, will reap the benefit of their researches and their toil.  
Liverpool, 3 mo. 21, 1848.

JOHN DE LA HAYE.

#### IMPROVEMENTS IN REFINING SILVER-LEAD.

[Specification of patent, granted Sept. 23, 1847, to Arthur Harry Johnson, of Gresham-street, London, assayer, for improvements in refining silver-lead, by effecting a saving in one of the materials used.]

This invention, which must commend itself to the notice of lead smelters, as one calculated to effect great economy in their establishments, consists in the following method of restoring after use, and rendering again available, the phosphate of lime or bone-ash, whereof the cupel or test is composed, which is used by refiners of silver lead, and is, in their process, saturated with lead, and a portion of silver. To extract this lead and silver, the course as yet usually adopted is to return the used cupel to the furnace, by which means the whole of the saturated bone-ash is destroyed; while a portion of the lead and silver, combining with the phosphoric acid of the bone, passes off, and is lost. By this improved method, little or no waste occurs of either the bone-ash, silver, or lead. To carry out the invention, a solvent of the oxide of lead is used, and the process recommended by the inventor is as follows:—First reduce the used cupel to a tolerably fine powder; then add to it a sufficient quantity of pyroligneous or acetic acid, varying from the specific gravity of 1.009 to 1.048, according to the per centage of lead contained—so as to render it of a thin consistence, that it may be thoroughly stirred, which is to be done by means of a dolly-tub, or some such convenient machine, or by allowing the acid to percolate through the powdered test. After allowing the powdered cupel and acid to remain together for two days (during which time occasionally stir them well together), the bulk of the lead becomes dissolved. Next turn the mixture into cloth or flannel filters, or other convenient percolators, so as to allow the lead solution to drain off; this done, remove the remaining soluble salt of lead, by washing with water, and by the application of pressure, previous to drying the resulting bone-ash.

By the process, as above described, the silver, and some lead, still remains in the bone-ash, though not sufficient lead to materially interfere with its absorbent powers on again using, provided it has been properly freed from the lead solution. If, however, it be wished to extract the lead more perfectly, add a second portion of the acid to the filtered or drained bone-ash, and again thoroughly stir it in this second acid—the washing and pressing, as before described, following this second operation.

To bring the lead, contained in the solution, into a marketable form, after due saturation, either simply evaporate it in proper pans to make sugar of lead, or by means of the several reagents commonly employed, form respectively the carbonate, the sulphate, the sulphuret, or other compounds of lead that may be desired. In place of the pyroligneous acid, a solution of caustic potash may be used, or soda, containing about 20 per cent. of the pure alkali; but this, the inventor states, he has not found so useful in practice.

Patent-office and Designs Registry, 210, Strand, March 22.

ON ANNEALING GLASS TUBES.—M. Bontemps read a paper at the Industrial Society of Mulhausen, on the causes of the breaking of glass tubes and cylinders. In order that a glass tube be in good condition, it is necessary that the interior particles should give way at the same time as the exterior. For this purpose, the tubes—such, for instance, as thermometer, barometer, and pressure gauge tubes—be placed in a baking, or annealing furnace, called the baking furnace, a brick casing of 6 in. diameter, and the length the tubes may require. This furnace is heated at one end to a dull red heat, at which the glass is nearly malleable, but not put out of shape; they are then (being in sheet-iron carriages, on wheels) drawn gradually to the cool end of the furnace, but so slowly, as only to traverse the distance in from 15 to 24 hours, according to the nature of the glass thus drawn gradually through a diminishing temperature to that of the atmosphere. There is a vast difference between glass baked and that unbaked—the latter is not so homogeneous, and polarises the light in passing through it. By applying, therefore, a fragment of a tube to a polarising apparatus, it can be ascertained if the tube has been baked.



## Transactions of Scientific Bodies.

## MEETINGS DURING THE ENSUING WEEK.

|           |  |        |
|-----------|--|--------|
| THIS DAY  | Royal Botanic—Inner Circle, Regent's-park  | 8 P.M. |
| MONDAY    | Geographical—A. Waterloo-place             | 8 P.M. |
|           | Medical—Bolt-court, Fleet-street           | 8 P.M. |
| TUESDAY   | Medical and Chirurgical—53, Berners-street | 8 P.M. |
|           | Chemical—Society of Arts, Adelphi          | 8 P.M. |
|           | Civil Engineers—25, Great George-street    | 9 P.M. |
|           | Zoological—11, Hanover-square              | 8 P.M. |
| WEDNESDAY | Microscopical—21, Regent-street            | 7 P.M. |
|           | Royal—Somerset-house                       | 8 P.M. |
| THURSDAY  | Antiquaries—Somerset-house                 | 8 P.M. |
| FRIDAY    | Royal Institution—Albemarle-street         | 8 P.M. |
| SATURDAY  | Asiatic—14, Grafton-street                 | 2 P.M. |
|           | Westminster Medical—17, Saville-row        | 8 P.M. |

## On Mining, &amp; the Practical Applications of Geological Science.

PROFESSOR ANSTED'S LECTURES AT KING'S COLLEGE.

## LECTURE XVIII.—MINING FOR METALS CONTINUED.—THE DISCOVERY AND RECOVERY OF MINERAL VEINS.

Professor ANSTED commenced his lecture by saying, that having now considered the principal phenomena connected with, or having reference to, mineral veins, and the various circumstances under which they were found in the crust of the earth, the next part of the subject would be the discovery and recovery of mineral veins; because, if the aspects and conditions under which they might be expected to be found were unknown, a knowledge of their value, and an idea of the mode of their production, would be of little practical value. The most important of all knowledge, in a practical sense, was that which enabled us to make use of our discoveries and researches; and so in scientific mining a practical application of science was indispensable. A practical knowledge, then, of the circumstances under which mineral veins existed, was a guide to the appearances which might lead to their discovery; and it was, therefore, necessary that a certain set of facts should be remembered. In the first place, it must be borne in mind, that those mineral veins which contain metals were limited in geological distribution; and that those crevices to which he had already referred so often, whether of the nature of open gashes, the result of contraction, or deep fissures, the result of faults, existed very frequently without mineral veins. A geological examination of the country was therefore necessary, in order to decide upon the probability of their presence, before looking for mineral veins with any reasonable expectation of finding them. Secondly, sets of them had commonly a distinct and definite direction—a most important fact in determining the probability of finding those lodes which were most valuable. Thirdly, the individual lodes were limited, not only in direction, but also in their extent—a fact which, though not universally ascertainable, was of great value in deciding upon the chance of finding them. This rule was, at any rate, so general, that it might be taken as a matter of fact, that all productive veins had definite compass bearings. Again, mineral veins almost invariably intersected the surface. They were, then, limited in geological distribution, they had a definite direction and compass bearings, and they intersected the surface. These were all points upon which the discovery of mineral veins in a great degree depended, so far as this discovery was expected from actual calculation and knowledge of probabilities.

Veins had no doubt been found, in past times, more frequently by accident than otherwise; but, when sought for, there were circumstances under which they might be safely looked for, or at least in which there was so much probability of finding them as would make it worth while to enter upon the search. They were sometimes found accidentally by exposure at surface; and sometimes naturally, by the outcrop of the beds; but this latter was so seldom the case, that a kind of search, founded on this possibility, was often advisable. They were found naturally when laid bare by a river, or exhibited on the face of a sea-cliff. A vein might also be accidentally laid bare in cutting a road, or other operations of that kind. A diagram was exhibited by the lecturer, representing an actual road section, near Penryn, in which an elvan dyke was thus cut through, and this showed that a mineral vein might have been laid bare under similar circumstances. And so, again, in countries where mineral veins were large and prominent, the appearance of the surface betrayed their presence in some cases, where the ore was unfavourable to vegetation. This was not so much the case in England, where the veins generally were small; but at Fohlan, in Sweden, for instance, where the magnitude of the vein happened to be enormous, a mere glance at the surface would be sufficient to show the existence of the mineral veins. The natural exposure of veins in this way, or in rivers, on cliffs, or at road-side cuttings, were, therefore, means which might be fairly resorted to; and thus these veins might be sometimes found accidentally. When veins were thus manifest, there was of course little difficulty in determining the fact of their presence; but there were other ways in which a little more labour and knowledge were required. A very common mode of discovering a metalliferous vein which crossed a river, or near which was a running stream, was by observing particles of the metalliferous ore in the stream. This process often led to the discovery of veins. Again, in a new country, veins were found in merely ploughing up the surface. This had been the case in North America, where chromate of iron and several valuable ores had been ploughed up; and, elsewhere, the same had happened with regard to ores of copper, although the latter were apt to be altered in character by exposure to moisture and to the atmosphere. So, again, when springs of water were found impregnated with metallic matter, it was certain the fluid must have passed over or through a lode, which might hence be determined. Accidental discovery depended on such facts as these; but the veins were usually much altered at the surface, and afforded little real indication of their true nature. It might be, too, that although in many countries, from the appearance of the surface, it was tolerably certain that mineral veins were near, no spot was so marked as to make it more likely than any other to be the actual outcrop of the lode. There were, lastly, some cases in which the existence of veins was more clearly indicated, and in which the miner was able to resort to direct experimental investigations. He thought it right to mention here, that there was a process resorted to, and believed in, even at this day, by many persons, and asserted so positively, and with such an amount of evidence, as to require all one's incredulity to discredit, and which, at the same time, was so absurd as to make him (Prof. Ansted) hardly like to allude to it. This was the use of the *divining rod*, the virtues of which were yet firmly believed in many parts of Cornwall, and in other mining districts. It was said, that some individuals had the power of discovering lodes, by means of a forked hazel twig, which they carried in a particular way, and which, when passing over metalliferous ores, or animal substances, or water, by some mysterious sympathy bent itself downwards.

He believed that there was a man still residing at Truro, who was said to possess this extraordinary faculty, and whose business it was to go about with his divining-rod for the purpose of discovering lodes. There was no doubt that the divinations of several veins had been apparently discovered in this way, which, were before quite unknown—for cases of that kind were recorded on good authority; but he believed that the instances in which the operator deceived himself, as well as his clients, might also be numerous. Considering the amount of evidence in support of the divining-rod, he (Prof. Ansted) thought it might be possible that there were individuals possessing so rare a sensibility—something of the nature of animal magnetism, perhaps—that they might be able to detect some atmospheric—possibly, an electric—change in the neighbourhood of metallic substances. At any rate, it was easier to believe this than to doubt all the evidence there was in existence on this subject—besides which, it was known that there were magnetic currents in the neighbourhood of veins. From time to time, veins had also been discovered by a lambent flame—something of the nature of an *ignis fatuus*—being observed at night over the surface. This, too, was one of those things which were asserted on good authority, and therefore, he had thought it necessary to mention it.

These, however, were not the usual means of discovering lodes—something more universal and more mechanical was necessary. There were accordingly two or three modes in general use of a more practical character; the simplest, and, in some districts, the most usual, was by tracing the existence of the lode, by taking advantage of the great specific gravity of some metallic minerals. When a metallic vein outcropped on a hill side, or in various other positions, the action of a current of water would gradually wash away the surrounding materials, leaving the lode behind for a period, that being harder than the rock. In course of time this would be decomposed, and carried away also, but deposited not far off—its specific gravity being heavier than the gravel with which it would be associated. By an examination of this gravel, the metal might be traced back to the spot from whence it originally came. This was called *shodding*, and it was a system which had been in use from the earliest period; it was known to the Romans when they conquered England, and it was peculiarly applicable to Cornwall, where tin ores abound. Tin ore, particularly when in the form of oxide, had a very high specific gravity; and, consequently, when particles of this ore are carried away by water, they readily and soon become separated from the gravel, or other material, with which they may be at first mixed up; they are thus deposited in any hollows over which the mass is conveyed. Of course, those fragments which were the largest would be carried the shortest distance; while smaller pieces would be often carried with the sand entirely away. In many parts of Cornwall a considerable quantity of

metal was obtained from these deposits, and it was from this circumstance called stream tin. A person accustomed to the metalliferous produce in this shape, could often readily determine whether the sands of rivers and streams contained tin; and when indications of the metal were thus observed, and it was wanted to discover the lode from whence it came, they would proceed up the stream, closely examining the sand all the while. After a time, as they approached the lode, the fragments would be found to be larger; and this would be the case until they were lost altogether; it would then be certain, that the point whence the particles had been washed into the stream was passed. The vein must then be sought for; and, by careful examination of the adjacent banks and hills, it would be discovered. When they were thus shodding for the tin, it was necessary to pay particular attention to the condition of the particles found—for, if they should be very angular, it was certain that they could not have undergone much rolling, and that, therefore, the lode must be near at hand. In many places in Cornwall the accumulations of stream tin were so abundant, that it paid well to employ men to discover them, and there were, consequently, a great many stream tanners employed, and several so-called "stream-works."

In other parts of the world, several of the heavier metals were obtained in a similar way. For instance, the greater part of the gold and platinum of commerce was obtained by washing; and works of this kind were mostly carried on on a very large scale. These metals were not, however, confined to the sands of rivers, since auriferous sands were found also in regular beds—as in the Ural Mountains, in Russia.—[The talented lecturer then directed the attention of his auditory to a number of interesting specimens of stream ores on the table, for which, he said, he was indebted to the kindness of Mr. Tennant.]—Of all methods of discovering metalliferous produce, that of *shodding* was the most simple and the most profitable; but it was only adapted to very heavy ores. Some ores which were exceedingly valuable, were so little heavier than the rocks with which they were associated, that the water would not separate them; and, of course, other methods must then be adopted. Under these circumstances, it was necessary to have recourse to *costeaning*. This was done by either cutting a trench at once across the direction of the lode, or first sinking a short shaft, and then running trial galleries from its base in this direction. In order to do this with effect, something must first be known of the distribution of the veins in the neighbourhood, their value, and their direction. This required previous observations to be made. In Cornwall, however, it was already known that the east and west were the right-running veins, and contained copper and tin ores; and, therefore, if the ores sought for were those of such metals, it would be necessary to run the level from the shaft, or cut to the trench, in a north and south direction, with the idea that the veins which were sought ran east and west. He had mentioned both these operations; but it generally happened that only one of them was practised in any particular district. Where the lodes usually cropped out in a condition which afforded a good indication of their quality, a trench would be sufficient; but, in other places, where the ores were much injured by exposure to the atmosphere, which was the case in Cornwall, particularly in respect to copper ore, it was often necessary to go down a little way, and to cut the vein below the surface, in order to tell with certainty whether or not it were worth the working. This involved considerable knowledge of the probabilities of the case, because they might otherwise go on costeaning at a great expense without any chance. When indications of ore were found near the surface, and it was not certain whether they proceeded from a real vein or not, although the vicinity of a lode was certain, it was often advisable to costean by sinking and driving, and so at once determine any doubtful point.

This method might well be adopted in a country where enough was known to justify the practical miner in commencing work, merely from the general metalliferous condition of the veins in a district; but in new countries, where there was no reason why a trial should be made in one place more than another, all that could be done was to costean by a trench, at right angles to the direction in which the veins were supposed to run, and it might be, that they would cut two, three, or more, before they arrived at one sufficiently valuable to work. It was the custom in Cornwall, under such circumstances, to sink and drive, and then go a little further, and sink and drive again, until the whole history of the district was learned.

It was necessary to know the circumstances under which the metallic ores existed. It would be of no use costeaning for gold and platinum, and metals of that kind, as they were generally disseminated in small quantities; so, again, certain kinds of silver ore were less to be expected in some districts than in others; and, in some, the veins might be expected to be more productive than in others. The most valuable ores containing silver were usually found in granite and gneiss or gneiss and talcy rocks. Tin was found in granite, clay-slate, and gneiss, and it was most abundant and most valuable in the upper part of the lodes, seeming to have been placed in the vein at an earlier period than the other materials; and, if tin and copper were found together in a vein, there was usually more tin than copper above—but the copper lay deeper, and there exceeded the tin in value. Copper again was found associated with clay-slate and granite, among the recent igneous rocks; but it would apparently be useless to look for it in more stratified rocks, except in the state of carbonate. Lead was generally found with silver and zinc in limestone, and without zinc in granite. Iron, on the contrary, was found in rocks of a volcanic origin; and mercury in rocks which had been altered by heat, as porphyry. Every kind of ore was associated in its own peculiar manner, and it was most important to consider this, in looking for them.

In districts which were untried, it was necessary to look carefully at the surface indications, the circumstances under which the metals appeared to have been distributed, and if any accidental discoveries had been made. The discovery of mineral veins in new districts was often accidental; this was the case in Australia, in South America, and in some parts of the United States: generally speaking, in these countries the evidence of the existence of veins was so distinct, that no great difficulties had been experienced in working them; but it might have been more useful in some cases, had the operations been so directed, as to afford a knowledge of all the surrounding district. The two most important methods then usually adopted in the discovery of mineral veins, were those of costeaning and shodding—the latter wherever there was stream ore, and the former where something was known of the circumstances of the case, to justify the risk.

The veins having been found, the next point was as to the best methods of working them; but that he should, for the present, pass by, and speak now of their recovery, when lost by nipping, or twitching. This part of the subject also involved the best means of judging of the condition of those mines in a district which, for some reason or other, had been abandoned.

First of all, then, the veins might be lost, either by nipping in, or branching, or by being crossed by other veins, or by a slip or fault. All these were very common accidents, and interfered much with the profitable working of mines; it was, therefore, very important that every newly-observed fact, in relation to them, should be recorded, so that the mining engineer might know what was the true nature of such checks to profitable progress. Veins were sometimes nipped in suddenly, or became gradually smaller, and sometimes they seemed actually to disappear altogether. There was, however, almost always some reason for this: if it took place in veins which were in the nature of fissures, terminating gradually, without throwing off strings, then, of course, the vein was really at an end; but if the nipping took place in going down, it was quite certain, unless it were a gash vein, that it might be followed and caught again, and probably found valuable again. The recovery of lodes in this way depended upon observations made in the general mine. If the vein were pretty uniform in its inclination or hade, and it was found that the nipping was part of a distinct arrangement, it was probable that it could not be followed further with advantage. If, on the other hand, it had been irregular, and had exhibited a succession of pockets, it would be advisable to look after it. If its inclination were very great, it would be necessary, perhaps, to look for it by costeaning—by going down at another point, and striking off in the direction in which it ought to be. The termination of a vein, by branching, was a very different thing. When a vein branched horizontally, it almost invariably became poor; if, on the other hand, several branches had a tendency to come together, it was a sign that the vein was about to become rich. In this case, it was necessary to consider whether or not it were best to sink again at once, rather than to go on with the branch. The most common case in which veins were lost sight of, was when they were actually removed by a fault from the place they once occupied. When this occurred in stratified rocks, the practical miner had no difficulty in tracing the vein in connection with the fault; but, in a country not stratified, it was difficult to find out what was the nature of the fault, or where to look for the vein again. It might have been lifted in one direction or the other—it might have been heaved or removed sideways; and in this doubt consisted the main difficulty.

When the circumstances of the fault were once known, the vein might be traced without hesitation in the depth. It was, generally speaking, necessary in searching for a vein which was lost, to look at the direction of the slide or fault, and take the acute angle; but, if frequently happened in Cornwall, which had been much disturbed, that, after the vein was thus recovered, it would be found disturbed again and again before the first movement was followed out, and many complications were thus introduced. The general rule, however, was to take the acute angle, and it was always advisable to attempt that as the surest course.

These were the principal things to be observed with regard to the recovery of veins, except that careful mathematical calculations might be introduced with advantage in some cases. French and German miners had paid great attention to this point, and had compiled formulae, for calculating the places where veins, which had been lifted, might be expected to occur; it was, however, often better determined by actual experiment. One circumstance should ever be borne in mind—when a vein was lost, it was lost for one or other of certain reasons, which might be known; and when the cause was once discovered, the recovery of the vein was comparatively easy.

The following lecture, which relates to the best modes of determining the value of old mining property, or abandoned mines, will be given at length in our next week's *Mining Journal*.

## INSTITUTION OF CIVIL ENGINEERS.

MARCH 21.—JOSHUA FIELD, Esq. (President), in the chair.

The discussion on Mr. Rankine's paper on "Sea Walls," was continued. Letters were read from Mr. Maclean, describing the Barrow and Flat sea embankments; and from Mr. Macdougall Smith, on the importance of using stone of great specific gravity in sea works.—Mr. BATEMAN stated the necessity of using hard and tough stones, which would resist disintegration by the friction of the shingle moved by the waves.—Mr. MURRAY corroborated the statements of Mr. Bateman, and recommended groynes as the best means of collecting sand and gravel, to protect exposed coasts, and the foundations of sea-works.—Mr. RANKINE replied to some of the remarks which had been made. He referred to Mr. Scott Russell's paper on sea walls, as being partly confirmed by his observations. He disavowed the intention of laying down universal rules for the construction of breakwaters in deep water, from observations on walls built on a flat beach; but, to show how the principle of such walls could be applied, he referred to the Cherbourg breakwater, where the top of a stone embankment formed an artificial beach, on which a vertical wall was founded.

The paper read was descriptive of "A Method of Setting out a Railway Junction," by A. Beauland. The object of the paper was to supply a methodical rule for setting out that portion of a branch line of railway included between the rails of the main line.

The author observed, that in all ordinary cases the curve of a branch line could not be set out from the main line, which was supposed to be straight, by the ordinary methods of setting out railway curves, since the junction was required to make an offset of 4 to 5 ft. on the length of the switch rail, which was much greater than the offset made from the tangent in the same length by a curve of moderate radius, so that it was necessary to make the junction line start abruptly at a finite angle with the main line. He, therefore, considered the junction-curve, to be determined by its passing through three given points—namely, the two extremities of the switch rail, and the furthest point of crossing; and from these data, he showed how the radius and centre of the circular arc might be found, as well as the positions and angles of the various crossings. To render the method more easy of application, the author gave a table, calculated from the principles and formulae laid down in the paper, assuming an ordinary form of the switch, and a series of values of the lead, a distance of the furthest crossing extending to the greatest limit likely to occur in practice. In the course of the discussion which ensued upon this method, as compared to the ordinary system of setting out junctions by a comparatively empirical rule, well understood and practised by the platelayers on railways, Mr. WYLD's switch was alluded to, and exhibited. In this switch all notching and inequality in the bearing surfaces of the fixed rails were shown to be avoided, by the ends of the tongues being housed under such surfaces, instead of being notched into them: the tongues being consequently at their points, and for some distance beyond them, lower than the fixed rails, exercised when they were weakest merely a lateral action against the wheels, without bearing any of the weight of the passing trains. Several engineers, who had employed these switches extensively, expressed themselves relative to them in very commendatory terms, and stated, that they were not only manufactured in a very superior manner, but that their action was very perfect, and that they tended greatly to the prevention of accidents in railway travelling.

The paper announced to be read to the meeting on Tuesday evening, the 28th March, was, "An Account of the Engineering Works upon the Rivers Meuse and Morrell," by G. B. W. Jackson, Assoc. Inst. C.E.

ROYAL INSTITUTION OF ENGINEERS AT THE HAGUE.—Some time since, about 200 persons, civil and military engineers, officers of the staff of artillery, architects, professors of mathematics, chemistry, physics, &c., requested of the Government of the Netherlands the authority to form an association, entitled Engineers' Institution, for the purpose of devoting themselves to this branch of science, and of improving it by every means. His Majesty immediately sanctioned the establishment of this institution, to which he gave the title of Royal Institution of Engineers. The Crown Prince, William of Orange, readily placed himself at the head of the new institution, with the office of protector and president. An institution commenced under such favourable circumstances promises the happiest results, and may prove of the most essential service to the country which gave it birth.—*Journal de la Haye*, March 21.

ELECTRIC TELEGRAPH.—An interesting series of lectures on electricity and electro-magnetism, by Mr. Noad, so well known from his admirable work on the subject, were brought to a close at the London Mechanics' Institution, on Wednesday evening—the lecture concluding with a review of the system of electro-galvanism, as applied to telegraphic purposes. The experiments were well selected, and the working of the telegraph was exhibited with two instruments, on the principle of Messrs. Brett and Little's recent patent, of which the lecturer spoke with considerable approbation. The lightning-conductor, patented by the same inventors, Mr. Noad pronounced theoretically perfect. Messrs. Brett and Little's telegraph alarm, for the prevention of railway accidents, was also introduced, and approvingly commented upon by Mr. Noad.

THE ELECTRIC TELEGRAPH APPLIED TO DOMESTIC PURPOSES.—Our attention has been directed, by some scientific friends, to the electric telegraph which has recently been fitted-up in the smoking-room attached to the Holt Arms, Lister-street, Birmingham. It is, indeed, a simple, useful, and beautiful piece of mechanism, and reflects infinite credit on the patentee and inventor, Mr. Reid, of University-street, London. The object of the inventor is of a three-fold character—to economise time; to save trouble; and to supersede the constant attendance of servants. The proprietors of public establishments of the same description as the Holt Arms, we imagine, will gladly avail themselves of the aid of so valuable an appendage, when its advantages and utility become more generally known. A brief outline will enable our readers perfectly to comprehend the working of it. It is composed of two instruments—the one placed on the chimney-piece of the smoking-room; the other on the mantelpiece in the bar. They are enclosed in mahogany cases, and form very handsome ornaments. On each instrument is a dial-plate, on which is inscribed the names of various articles that are in constant requisition. One instrument is a *fac-simile* of the other, and both are connected with galvanic wires, and a small cell battery. The visitor, in calling for refreshment, rings the bells to attract attention; he then gives the signal on the instrument before him by moving a handle, which puts in motion a pointer or indicator, in the precise direction in which the name of the particular refreshment wanted is inscribed. This is communicated with the speed of lightning to the instrument in the bar, and the refreshments are placed before him without a single question being asked. A view of this unique, simple, and valuable invention is readily obtained, free of expense, by calling at the Holt Arms, to the landlord of which we are indebted for the opportunity afforded us of making this hasty sketch. Before dismissing the subject, we may add, that the new patent telegraph is equally adapted to almost any branch of business, and more especially to mines, banks, or large commercial establishments, such as factories, where constant communication is obliged to be kept up between floor and floor; the proprietors having the dials spoken of inscribed to suit their peculiar avocations. The use of this important medium of intelligence will be found equally valuable to noblemen and gentlemen in their mansions, where rapidity of communication, and abbreviation of the labour of domestic servants, are of the highest importance.—*Birmingham Advertiser*.

GRAVITATION OF THE ELECTRIC FLUID.—Mr. Lake, of the Royal Laboratory, Portsmouth, has communicated to the *Lancet* the results of a singular experiment, which appears to show, that the electric agent is really fluid; and that, when collected so as not to exert its powers of attraction and repulsion, it obeys the laws of gravitation like carbonic acid and other gases. The electric fluid was received in a Leyden jar insulated on a glass plate. At the lower part of the jar was a crack in the side, of a star-like form, and from around this the metallic coating was removed. On charging the jar, it was observed that the electric fluid soon became to flow out in a stream from the lower opening; and on continuing the working of the machine, it flowed over the lip of the jar, descending in a faint luminous conical stream (visible only in the dark) until it reached the level of the outside coating, over which it became gradually diffused, forming, as it were, a frill or collar. When the jar was a little inclined on one side, there was a perceptible difference in the time of its escape over the higher and lower parts of the lip, from the latter of which it began to flow first. On discontinuing the working of the machine, the fluid first ceased to flow at the lip of the jar, and then at the lower aperture. On renewing the operation, it first reappeared at the lower aperture, and afterwards at the mouth. This very ingenious experiment appears to establish the fact, that the electric fluid is material, and is influenced, under certain circumstances, by the laws of gravitation. Mr. Lake proposes for it the name of *pyrogen*; but this is inconvenient, because it is already applied to certain chemical products.—*Medical Gazette*.

IMPROVED BELL-HANGING.—A short time since, we noticed Parker's patent "annunciator" for hotels, mansions, &c., whereby only one bell is required, and the particular room is indicated by a number appearing on the face of the machine (see *Mining Journal* of Feb. 26). It seems to be a very ingenious and efficient arrangement. In consequence of that notice, we have received a letter from Lincoln, signed John Middleton, stating, that he has been in the habit of effecting the same thing for a long time past—and pointing to the Pallatine Hotel, Manchester, where his arrangement has been in operation for two years; and the Great Northern Hotel, Lincoln, where, in a short time, may be seen 44 rooms, on two landings, all communicating with two bells. He says—"I have no intention of patenting my method, and any person is at liberty to examine it, and either carry it out in its integrity, or make such improvements, as their ingenuity may suggest."—*Builder*.

GORRAL'S GRAVITATION WATER-WORKS.—We understand that these works are now nearly completed. The water has now been conveyed to the pipes. On Tuesday afternoon, a jet d'eau from one of the branches was put in operation on the bank of the river, at the foot of South Portland-street. So great is the pressure obtained, that the water issuing from the jet was propelled into the air to a height of from 80 to 100 ft. perpendicularly.—*North British Mail*.

A RARE SHOT.—Commander Mackinnon, in his *Steam Warfare on the Parana*, mentions the following almost incredible instance of a shot passing through both of the paddle-wheels of his vessel, without touching any part of either:—"It struck the paddle-box on the enemy's side, 8 ft. or 4 ft. above the shaft; went clean through the wheel without touching any part of it, and then passed across the deck and through the other paddle-box, not above 18 inches from the shaft, still not touching a single blade, or any portion of the paddles. At the rate the wheels were revolving (about 12 times a minute), it appeared quite impossible to fire a pistol-bullet without striking some part of them; and yet this 16 lb. shot had gone through both wheels, leaving no mark but the hole at entering on one side and departing on the other."—*Mech. Mag.*



## The Metallurgical Treatment of Ores.

(Continued from March 4.)—No. XIV.

**Ordinary Cupellation.**—The furnace employed in this operation are of the reverberatory class, the common form being so modified as to suit the present purpose. The upper part of the dome, or reverberatory portion of the furnace, is sometimes fixed, and sometimes movable—it is more generally fixed in the furnaces employed in England. In case it is movable, it is raised by a crane. This form of furnace is very convenient, for the cupel can be readily restored. The interior shape of the furnace is lenticular, the hearth being formed into a kind of cup, and the vault very much flattened. The vault has the necessary curvature, when the flame is forced towards the centre of the cupel; this point ought to be that of maximum temperature, so that the alloy, which becomes richer as the operation proceeds, can collect in one spot, and not be scattered over the whole surface of the cupel. The upper part of the hearth of the furnace has a channelled opening, so that the fused oxide of lead can run off; opposite to this opening is another, through which passes two tuyeres, which convey to the surface of molten matter in the cupel a blast, produced by either a fan or powerful bellows. When the arch of the furnace is movable, it is made of cast-iron; in the contrary case, it is of brick. It is the construction of the hearth, or cupel, which particularly characterises this class of furnace. To fulfil the end in view, the matter forming the sole ought to be slightly porous, and permeable to oxide of lead, and yet to be very little acted on by that substance when in a state of fusion. In cupellation in the large way, very little oxide of lead can be absorbed by the substance of the cupel; it is collected as litharge, which runs off in a state of fusion. The cupels need not, therefore, be very porous, like those employed by the assayer. Wood ashes are generally employed in the manufacture of the cupels employed on the continent. The ash employed is, however, that which has had its soluble alkaline contents removed by water; the residual ash of the soap-house is obtained, if possible. The washed wood ashes are spread over a large surface, beaten strongly with wooden stampers, taking care to remove those portions which cannot be broken up. The whole is then screened and mixed with a portion of the bottom of an old cupel (as free as possible from oxide of lead), which has also been broken up, and screened. After mixture, a sufficient quantity of water is added, to make the above adhere together, when strongly pressed; it is placed by small portions in the furnace, whose hearth it is to form, commencing from the circumference, and working to the centre, taking care to make each portion added as solid as possible, by continued heating. The interior is then perfectly smoothed, and a small gutter cut, for the purpose of allowing the passage of the fused litharge as it forms. When the sole is thus prepared, it is dried by burning in it a mixture of wood and charcoal; it is then covered by a layer of straw, on which the pigs of lead (whose silver is to be separated) are placed. The fire is then pushed briskly, until the lead is red-hot; the blast is then let on; about half an hour after this, the bath of lead becomes very firm, and shining. When this happens, the fire is slightly damped, and the lead oxidises, litharge gradually runs off, and the remaining lead continually increases in richness in silver. It is necessary so to regulate the blast, that it be very uniform in quantity and pressure, and the fire must be so managed that it has never above a certain degree of temperature; if these precautions be not attended to, much silver will be lost by volatilisation. When the operation is very nearly finished, the fumes, which during the full progress of the operation completely filled the furnace, suddenly disappear, the button of silver in an instant becomes quite bright, producing a kind of fulguration, termed the brightening; as soon as possible, water is allowed to run on to the silver in the furnace, and the cooled silver removed. This kind of brightening terminating the operation of cupellation does not indicate that the silver is pure, and must not be confounded with the brightening which takes place in the assayer's cupel, when the bottom, or prill, of silver becomes solid. In the present case, the disappearance of the fumes merely indicates that at that particular temperature the lead, which is yet in a state of alloy with the silver, cannot be oxidised—so that the residual silver contains more or less lead, according to the temperature to which, during the operation, the fire has been urged. This limit varies very much, yet an experienced workman can generally reduce the silver to the same standard in corresponding operations. The silver thus obtained is pure in other manipulation, which is analogous to the preceding, and is called refining. This refining operation is carried on in a cupel, made by strongly pressing ashes into a sheet-iron vessel, the dimensions of which are about 12 in. diameter, and 8 in. in height. In the ashes so pressed, a hole of suitable size to contain the silver to be operated on is made. The cupel thus prepared is heated, by placing it in a furnace, so that a blast may be directed in its interior. While the cupel thus formed is being heated, two buttons of silver, produced in a previous cupellation, are made red-hot; and, whilst at that temperature, they are placed on an anvil, and broken into pieces, each being about from 3 in. to 6 in. square; some pieces of paper are then put into the hot cupel—and whilst in a state of ignition the silver is added, lastly charcoal, and the temperature raised to a red heat; at the end of three quarters of an hour, the blast is allowed to act. When the blast is sufficiently hot, the charcoal is removed, and large pieces of charcoal substituted. The blast acting on the surface of the bath, which is continually stirred, the lead may be seen to oxidise, forming slag, which is most carefully removed; after about an hour's treatment, the silver is pure. The surface of the bath becomes exceedingly bright, and an iron rod dipped into it for about 4 in., and suddenly withdrawn, has attached to it a button, which presently enlarges on all sides. It is known by these characteristic signs when the operation is finished. The coals are then withdrawn, the blast cut off, and the cooling finished, by pouring water on the silver, which is then taken out, cleaned, and some fragments assayed in the small way, to determine the standard of the mass.

In England, however, the method of cupellation is somewhat different, and is generally preceded by a process for which Mr. Pattinson, of Newcastle, procured letters patent. The object of the process is, to concentrate the silver in the lead, so as to cupel a richer alloy, and obtain the same amount of silver in a less time, with a diminished amount of fuel, and a greater return of lead. By this process, also, silver-leads which are exceedingly poor in silver, and which, before Mr. Pattinson's invention, could not be profitably worked, now yield good returns, and nearly all available silver is extracted. The rationale of the process is much as follows:—If a large quantity of lead, containing a small quantity of silver, be melted, and then allowed to cool down, until such time that granular crystalline masses of metal form in it, two things have taken place.—1st. A separation of solid matter, which can be removed by a strainer, has been effected; this solid matter is nearly pure lead; it having crystallised from solution in an alloy of silver-lead, which is more fusible than the pure metal.—2d. There remains a smaller quantity of lead than was first melted, and which contains all, or very nearly all, the silver which the whole bulk of lead originally contained. In practice, the following is the method adopted:—There are generally three or four pots, made of cast-iron, and capable of containing from two to three tons of lead. They are heated by separate fires. There is also a smaller pot, holding only 2 or 3 cwt., by which apparatus necessary to complete the list, is an iron strainer, affixed to a long pole, by which it is worked in the pots. The lead, in the first pot, is melted, and then stirred with the strainer, until it commences to crystallise. When this happens, the workman takes out a strainerful of the crystalline deposit, gives the strainer a tap or two on the side of the melting-pot, so as to allow as much as possible of the rich silver-lead to drain off; the solid matter is then transferred to the next pot, and the removal of crystals kept up until the lead from the first pot. The second pot is then treated in the same manner, and the crystals so formed turned into the third; and the molten liquid, or rich alloy of each of the pots, added to that in No. 1.—so that the poor lead keeps continually passing to one side of the range of melting-pots, and the rich silver-lead to the other. The lead in the smaller pot, just mentioned, is kept at a higher temperature than that in any of the others—the purpose of which is, to melt off any crystals which may adhere to the strainer, and clog the holes. The following statement of the contents of each pot in silver is by Dr. Cro; in this calculation seven crystallising pots are employed, and one smaller one, for receiving the desilvered lead, as may be seen, from an explanation above, each pot must vary in its contents of silver:—The first, containing about 85 cwt. of lead, at about 60 cwt. of silver per ton=225 cwt. is divided into 55 cwt. of crystals, carried to second pot, at 35 cwt. per ton=96 cwt.; 18 cwt. of crystals to be put in first pot again, at 64 cwt. per ton=57 cwt.; 12 cwt. of rich lead, to be cupelled at 170 cwt. per ton, 102 cwt.=255 cwt. The second pot, containing 90 cwt. of lead, at about 35 cwt. per ton, 157 cwt.—is divided into 50 cwt. of crystals, carried to third pot, at 20 cwt. per ton, 60 cwt.; and 30 cwt. of lead put into first pot, at 65 cwt. per ton, 97 cwt.—is divided into 55 cwt. of crystals, carried to fourth pot, at 10 cwt. per ton, 27 cwt.; and 25 cwt. of lead put into second pot, at 36 cwt. per ton, 63 cwt.—90 cwt. The fourth pot, containing 80 cwt. of lead, at about 10 cwt. per ton, 40 cwt.—is divided into 55 cwt. of crystals, carried to fifth pot, at 54 cwt. per ton, 15 cwt.; and 25 cwt. of lead, put into third pot, at 20 cwt. per ton, 25 cwt.—40 cwt. The fifth pot, containing 80 cwt. of lead, at about 54 cwt. per ton, 22 cwt.—is divided into 55 cwt. of crystals, put into sixth pot, at 3 cwt. per ton, 84 cwt.; and 25 cwt. of lead, put into fourth pot, at 10 cwt. per ton, 24 cwt.—22 cwt. The sixth pot, containing 80 cwt. of lead, at about 3 cwt. per ton, 12 cwt.—is divided into 55 cwt. of crystals, at 14 cwt. per ton, 44 cwt.; and 25 cwt. of lead, put into fifth pot, at 6 cwt. per ton, 71 cwt.—12 cwt. The seventh pot, containing 55 cwt. of lead, at about 14 cwt. per ton, 4 cwt.—is divided into 25 cwt. of crystals, carried to small pot, at 2 cwt. per ton, 5 cwt.; and 30 cwt. of lead, put into sixth pot, at 21 cwt. per ton, 34 cwt.—4 cwt.

The following are the details of the English method of cupellation:—The furnace employed does not differ from an ordinary reverberatory furnace, excepting in having an opening made in the sole, for the purpose of receiving a cupel, which is generally formed of bone and wood-ashes—ferrous are preferred by some, and occasionally a little peat-ash is added. The success of the operation depends very greatly on the good qualities of the cupel—therefore, much time and trouble are expended in its manufacture. A mixture is made of good fernash, and well-calined bones—the latter is about the proportion of 1-8th, or 1-16th, according to the quality of the fernash, which is employed in consequence of the large quantity of potash it contains, and which possesses the property of partially vitrifying the bone-ash, and rendering the cupel less friable, and less liable to accident.

It is for this purpose also that peat-ash is added, when fernash cannot be obtained. The whole is well mixed, and passed through a tolerably fine sieve, then slightly moistened, as directed in the formation of cupels by the French and German method, just described. It is then placed in an iron frame (fixed in the sole of the furnace by means of proper stays), and spread evenly to about 2 in. in thickness; it is then stamped in by means of a wooden pestle, another layer is added, and the stamping repeated, until the frame is filled with the composition. A hole is then scaped in the mass thus formed, and at one end is formed a channel, so that the litharge formed during the operation may run off. The fire is then lighted, and the cupel cautiously and carefully dried at a gradually increasing temperature, until it has attained a red heat.

The lead to be cupelled is now melted in an iron pot, and gradually introduced into the cupel with a ladle; this accomplished, the heat is raised, until litharge forms abundantly on the surface of the melted lead. The workman then deepens the gutter in the cupel by a bent rod, so as to favour the separation of the litharge, which is forced towards this opening by a blast, which is now let on from that part of the furnace opposite the litharge gutter. A quantity of lead, equal to that converted to litharge, is now gradually added; and when the gutter is much deepened, that not above an inch of metal remains in the cupel, the blast is shut off, and the gutter stopped up by moistened bone-ash, and another formed near the first. The cupel is then recharged, and the operation gone on with as at first, and so on, until sufficient rich lead has been produced.

This lead is removed from the cupel, and again treated in the same kind of furnace, for the purpose of obtaining its silver—the only difference being, that the cupel has a deeper hole, corresponding to the quantity of silver, which, towards the end of the operation, is removed in the form of a cake, which generally weighs from 100 to 200 cwt. (In our next week's Journal, we shall conclude our paper on cupellation, and commence the processes employed in the separation of silver from copper.)

## NEW PATENTS.

G. Ellis, Droitwich, Worcestershire, salt manufacturer, for certain improvements in manufacturing salt, and in apparatus for manufacturing salt.  
W. E. Norton, Chancery-lane, Middlesex, for an improvement or improvements in making coupling joints for pipes, nozzles, stop-cocks, mill and cylinder heads, and other apparatus (being a communication).  
S. W. Henderson, Parkhead, Lanarkshire, Scotland, chemist, for improvements in treating lead and other ores.  
J. Orri, Guildhall-chambers, gentleman, for certain improvements in the manufacture of artificial stone ornaments, ornamental tiles, bricks, and quarries.  
W. J. Dalby, Lambeth, Surrey, for certain improvements in machinery for propelling.  
J. L. Cole, Lucas-street, Middlesex, for certain improvements in steam-engines.  
H. Bessmer, St. Pancras-road, Middlesex, for improvements in the manufacture of glass.—*Mechanics Magazine.*

## PROFESSIONAL LIFE ASSURANCE COMPANY.

Connecting the Clerical, Legal, Military, Naval, and Medical professions, and holding out advantages to the public not hitherto offered by any similar institution. Incorporated.—Capital £250,000.

Established upon the mixed, mutual, and proprietary principle.  
Rates essentially moderate.—Every description of policy granted. Immediate, survivorship, and deferred annuities; and endowments to widows, children, and others.—Every policy (except only in cases of personation), indissoluble.—The assured permitted to go to and reside in Canada, Nova Scotia, New Brunswick, Australasia, Madeira, Cape of Good Hope, and Prince Edward's Island, without additional premium.—Medical men remunerated for their reports.—Loans granted on real or personal security.—One-tenth of the entire profits appropriated for the relief of the assured while living, and of his widow and orphans.—Annuities granted in the event of blindness, insanity, paralysis, accidents, and any other bodily or mental affliction, disabling the parties.—Persons of every class and degree admitted to all the advantages of the corporation.—Rates for assuring £100 at the ages of 25, 35, 45, and 55, respectively—namely, £1 14s. 6d., £2 5s. 6d., £3 4s. 3d., and £4 18s. 6d.  
Prospectuses, with full details, may be had at the office.—Applications requested from parties desirous of becoming agents. EDWARD BAYLIS, Actuary and Secretary. Offices, 76, Cheapside, London.

## CALEDONIAN RAILWAY COMPANY—LOANS ON DEBENTURES.

TENDERS FOR LOANS ON DEBENTURE BONDS are now RECEIVED in sums of not less than £500, for any number of years not exceeding five years, at the rate of 3 per cent. per annum, payable half-yearly, in London, Edinburgh, Glasgow, or in any country bank.  
Tenders to be addressed to this office, giving full name and address of lender.—Parties may also communicate with Messrs. Foster and Braithwaite, 68, Old Broad-street, London. By order, D. RANKINE, Treasurer.  
Caledonian Railway Office, Edinburgh, Feb. 25, 1848.

## CORNWALL NEW MINING COMPANY.

Capital £100,000, divided into 20,000 shares, of £5 each.  
(With power to be increased.)  
To be incorporated, in pursuance of the statute of 7 and 8 Vic., cap. 110—by which the responsibility of each shareholder is limited.  
Deposit 20s. per share.

Not to be Paid until the Company is completely Registered and Incorporated.  
The CORNWALL NEW MINING COMPANY is ESTABLISHED TO WORK A SERIES OF TIN AND COPPER MINES, chiefly in the district of ST. IVES, which has hitherto afforded a larger profit on its return of ore than any other part of the county.  
In pursuance of this plan, five of this description have been already selected—viz.: Georgia Tin Mines, Trevertha Tin and Copper Mine, Bray Tin and Copper Mine, Trevertha Tin and Copper Mine, and Wheel Squire Tin and Copper Mine, with whose owners the committee have been enabled to make such advantageous arrangements, as to enable them to work one or more with even a small portion of the proposed capital.  
These mines are not only known to contain mineral ores of immense value, but the workings are already so far advanced, that the lodes ascertained and reached must produce early and large returns; and, in addition to the above, there are others which the committee have secured on sufficient public support being obtained.  
Employment of their capital, the committee have made the shares £5, and of which only £2 10s. is to be paid within 18 months—limiting further calls to the control of the subscribers themselves, and to be made only when a dividend shall have been declared.  
Applications for shares to be made, in the usual form, at the offices of the company, 17, Essex-street, Strand; and to the following brokers and agents, of whom detailed prospectuses may be obtained:—Messrs. G. and T. Irvine, Liverpool; Messrs. Cardwell and Sons, Manchester; Messrs. J. Scott and Son, Birmingham; Messrs. Rhodes and Hayes, Leeds; Messrs. Brady and Co., Hull; Mr. Joseph Clarke, Jun., Southampton; Mr. Chas. Leeder, Messrs. Widdows, Glasgow; Messrs. Stansfield, Plymouth; Messrs. W. Moore and Co., Huddersfield; Mr. Thomas Dewhurst, Bradford; Mr. Henry Vatcher, Exeter; Mr. Ralph Dodsworth, York; Mr. W. F. Collier, Brigham; F. Crowe, Great Yarmouth; Mr. Charles Vincent, Dartmouth; Messrs. Edward Morgan and Co., Norwich; Messrs. Robinson Crusoe and Son, King's Lynn.—Prospectuses can also be had at the office of the Mining Journal, 36, Fleet-street, London. GEORGE LOCKWOOD, Secretary. Office, 17, Essex-street, Strand.

## EAST WHEAL FRIENDSHIP MINING COMPANY.

ADJOINING OLD WHEAL FRIENDSHIP.  
TO BE WORKED ON THE "COST-BOOK" PRINCIPLE.

REPORT OF J. H. HITCHING, ESQ., OF THE DEVON GREAT CONSOLS.  
In viewing the sett generally, I have only to remark, that I consider it one possessing advantages of more than ordinary character; and, as a mining investment, as good as any can be. The lode at present in the add end, now driving east of the River Tavy, being the large masterly one of Wheal Friendship Mines, which has proved so profitable to the adventurers—from 4 to 6 feet wide, intermined throughout with gossan, maulic, copper, peach, prill, and all the other characteristics comprised in the term "kindy."  
Application for the remaining shares, or further particulars, apply at the office of the company, 48, Threadneedle-street; or of Mr. James Lane, 75, Old Broad-street.

## SNYDER'S PATENT LEATHER COMPANY.

(Provisionally Registered, pursuant to the Act 7 and 8 Vic., cap. 110.)  
Capital £50,000, in 10,000 shares, of £5 each.—Deposit 10s. per share.—No call to exceed 10s. per share, nor at intervals of less than three months.  
CHAIRMAN—JOHN GARDNER, Esq., M.D., 51, Mortimer-street, Cavendish-square.

G. W. BLANCH, Esq., 3, Albion-place, Blackfriars-road.  
H. ENGLISH, Esq., 25, Fleet-street.  
W. PEARSE, Esq., High-street, Exeter.  
THOMAS PORTER, Esq., City-terrace, City-road.  
W. SHEARMAN, Esq., 12, Green-street, Ardwick, Manchester.  
JOSEPH SMITH, Esq., Parkfield, Rusholme, Manchester.  
W. STAGG, Esq., Green-park, Manchester.  
W. THURGOOD, Esq., Homingfield Villas, West, Barnsbury-park, Islington.  
D. L. WILLIAMS, Esq., 6, Edwards-square, Kensington.  
W. M. WILLIAMS, Esq., 17, Wilmot-street, Brunswick-square.  
BANKERS—The Commercial Bank of London, Lothbury.  
SOLICITOR—E. Moss, Esq.—SECRETARY—Mr. E. W. Fenton.  
OFFICES—TEMPLE CHAMBERS, FLEET-STREET.

This company has been formed to carry into effect an improvement in the art of tanning, by which leather is rendered not only superior in quality, but is produced at a lower price, and more uniform in texture, than by any process hitherto known.  
A patent having been granted to Mr. Snyder for his improvements in tanning, the rights of the patentee have been secured, on advantageous terms, as also his services in carrying out the operations of the company.

From estimates which have been carefully gone into, and which can be inspected on application at the offices of the company, a large return on the capital employed will be obtained, even to the extent of 100 per cent. per annum.  
This estimate may appear to show profits so far beyond the ordinary result of trade as to call for explanation. Snyder's patent affects a saving of—1. Half the time in tanning; 2. 12 or 15 per cent. of skin or hide—i.e., the leather produced weighs so much more; 3. A saving of 10 per cent. of tan; and 4. The production of a superior article. In this respect Snyder's Leather will compete with the best French Leather.  
Prospectuses, with every information, will be afforded on application to E. Moss, Esq., Solicitor, 4, Queen-street, Cheapside; or to the secretary, at the offices of the company, to whom applications for shares are to be addressed.

The directors beg to claim the attention of the public to their arrangements, which, they trust, will be found to secure the interest of subscribers, without incurring any of those evils not unfrequently attendant upon such enterprises.

## NATIONAL DISINFECTED AND DRY MANURE COMPANY.

OFFICES—No. 7, BANK CHAMBERS, LOTHBURY.  
Capital £200,000, in 20,000 shares, of £10 each.—Deposit 1s. per share.  
No call will exceed 5s. per share, and the liability of shareholders will be limited to the amount of their respective shares.

PATRONS (LOCAL).  
GEORGE FREDERICK MUNTZ, Esq., M.P., Birmingham.  
W. ALSTON, Esq., J.P., Elmdon Hall, near " "  
B. E. FLETCHER, M.D., F.R.S., Members of the " "  
JAMES RUSSELL, M.D., [Sanitary Board,] " "  
WELCH, Esq., High Bailiff, " "  
GEORGE EDMONDS, Esq., Clerk of the Peace, " "  
PROVISIONAL COMMITTEE.  
GERARD BARRY, M.D., Charles-street, St. James's-square.  
JAMES ORRILL, Esq., 11, Old-square, Birmingham.  
JOSHUA E. COOPER, Esq., West Ham, Sussex.

The object of this company is to collect the animal and vegetable refuse of large and populous towns, and subsequently to convert them into a dry, inodorous, and portable manure. By the company's process all decomposed substances, whether animal or vegetable, liquid or otherwise, may be rapidly converted into a scentless manure—rich in every fertilising quality, and abounding in vegetable stimulant.

A manure, somewhat similar, has for some time been manufactured by a prosperous company in Paris, under the commercial firm of Baronnet and Co.' The last report states, that crops were obtained incomparably finer, and more abundant, than by the use of any other manure.

The cost of preparation is trivial, in comparison with any of the present methods of dressing. The committee, therefore, have no hesitation in affirming, that the profits will realise the most sanguine expectations of shareholders.

The operations of the company will commence in the town of Birmingham.—Samples of the manure may be seen at the offices. JAMES H. KENWORTHY, Sec.

## NATIONAL DISINFECTED AND DRY MANURE COMPANY.

COMPANY.—Notice is hereby given, that the ALLOTMENT OF SHARES IN THIS COMPANY having been made, the LETTERS will be POSTED this day.  
March 25, 1848. JAMES H. KENWORTHY, Secretary.

## LONDON AND PROVINCIAL DETECTIVE ASSOCIATION.

FOR THE PROTECTION OF TRADE.  
No. 39, SOUTHAMPTON-BUILDINGS, HOLBORN, LONDON.

Office Hours: TEN TO FOUR.  
The object of this institution is to furnish every information (which may be obtained by subscribers only) respecting all parties, in any capacity whatever, avoiding their creditors, under any circumstances; also, in providing every species of information calculated to protect Bankers, Merchants, Tradesmen, Companies, Institutions, Assurance Offices, Loan Societies, Auctioneers, Landlords, Tenants, &c., in such a manner hitherto unattempted by any kindred society.

Subscribers may be preserved from losses through fraud of all kinds, by previous application at this office. They are also requested to make every communication in their power that may tend to protect the members, which will be considered strictly private, and, at the same time, deemed a favour.

Persons wishing to become members of this association, must apply, by letter only, addressed (pre-paid) to the secretary, who will forward the rules, and the terms of which are £1 1s. per annum—10s. 6d. in advance. H. E. NEWMAN, Secretary.

## PATENT GALVANISED IRON AND WIRE ROPE WORKS.

MILLWALL, POPLAR.  
ANDREW SMITH begs to inform the Mining, Railway, and Shipping interests, that he has obtained a PATENT for an IMPROVED METHOD OF GALVANISING IRON, producing a much superior article at a considerable saving in cost—the improved process for galvanising wire rope, adding only £10 per ton instead of £30, under the ordinary process. The rope is extensively used in damp situations, for mining and railway purposes, and for ships' standing rigging.

## FLEXIBLE HOSE-PIES FOR LOCOMOTIVE ENGINES.

RAILWAY CRANES, FIRE-ENGINES, GAS, &c.  
PATENT VULCANISED INDIA-RUBBER HOSE-PIES AND TUBING OF EVERY DESCRIPTION.

These pipes are made to stand hot-water without injury—are very superior to leather pipes, or the common India-rubber pipes; and, as they do not become hard or stiff in the lowest temperatures, or require any application when out of use, are particularly well adapted for fire-engines.

FLEXIBLE TUBING, of every description, for gas, chemical purposes, &c.  
VULCANISED INDIA-RUBBER WASHERS, all sizes, for steam and hot-water joints, &c.—Sole manufacturer, JAMES LYNE HANCOCK, Goswell-road, London.

## IMPORTANT TO RAILWAY AND STEAM NAVIGATION COMPANIES, MANUFACTURERS, AND ENGINEERS.

W. BROTHERTON AND CO'S  
PATENT LUBRICATING FLUID (or Animal OIL) FOR ALL DESCRIPTIONS OF MACHINERY.

W. B. & CO. have the pleasure to state, that the above article is extensively used in her Majesty's Steam Navy, and by several of the principal Steam Navigation and Railway Companies, and is pronounced by them, and by the first practical engineers of the day, to be far better adapted for the purposes of lubrication than any other article hitherto used for such purposes. The Patent Lubricating Fluid is equally applicable for the most intricate and fine pieces of machinery, as for the heaviest bearings of the steam-engine. It is cheaper, much more economical, and cleaner than oils at present in use; is free from smell, and calculated to effect a vast saving in the expenditure of working steam powers. Further particulars can be had, and testimonials seen, by application to the manufacturers, W. BROTHERTON & CO., Hungerford Wharf, Strand, London. S.B.—The above article will burn in lamps, and give a light equal to the best sperm oil.

## TO ENGINEERS AND BOILER-MAKERS.

LAP-WELDED IRON TUBES, FOR MARINE AND LOCOMOTIVE STEAM-BOILERS, TUBES FOR STEAM, GAS, AND OTHER PURPOSES, ALL SORTS OF GAS FITTINGS.

THE BIRMINGHAM PATENT IRON TUBE COMPANY,  
42, CAMBRIDGE-STREET, BIRMINGHAM, & SMETWICK, STAFFORDSHIRE, MANUFACTURE BOILER AND GAS TUBES, under an exclusive License from Mr. R. Prosser, the patentee. These tubes are very extensively used in the boilers of marine and locomotive steam-engines in England and on the Continent—are stronger, lighter, cheaper, and more durable than brass or copper tubes, and are warranted not to open in the weld.  
42, CAMBRIDGE-STREET, CRESCENT, BIRMINGHAM.  
WORKS—SMETWICK, STAFFORDSHIRE.  
LONDON WAREHOUSE—No. 68, UPPER THAMES-STREET.

## TO ENGINEERS, RAILWAY AND STEAM-BOAT COMPANIES.

AND THE OWNERS OF STEAM-ENGINES IN GENERAL.  
W. & C. MATHER beg to call the attention of the above parties to their PATENT ELASTIC METALLIC PISTON.

From the great satisfaction it has already given, they can, with confidence, recommend it. The following are some of its excellent properties:—

1. The great, equable, and mild elasticity: its being perfectly cylindrical and self-adjusting—thereby enabling it to yield, with the least possible friction, to any inaccuracies of the cylinder, whether oval or tapered.
2. Its extreme simplicity and lightness—the packing consisting of ONLY TWO PIECES OF METAL, having vertical and horizontal elasticity in due and proper proportion, independent of each other—the horizontal elasticity being also independent of screwing down THE JUNK RING OR COVER.
3. It takes the least possible space; and is, therefore, well adapted for air and water pumps.

The above patent was unsuccessfully opposed by Mr. Goodfellow, the patentee of a piston, having three angular rings, of a bevil form.

The Solicitor-General conceived that there was not the slightest similarity between them, as may be seen from the subjoined letter from Mr. Carpmel, through whom the patent was taken.

W. and C. M. can refer to upwards of 160, made since the date of the patent (April, 1846), each of which is giving entire satisfaction. They beg to call attention to the fact, that, in a number of cases, they have replaced those made of three angular rings of the bevil form, a description of which appeared in the Mining Journal of Saturday, October 2, 1847.

DEAR SIR.—[LETTER REFERRED TO.] April 2, 1846.  
Mr. Solicitor-General took the hearing in your patent yesterday, at the Privy Council, and decided that the invention did not interfere; we are, therefore, proceeding with the patent.  
We are, your obedient servants,  
POOLE & CARPMAEL.

The object of publishing the above letter, is to convince parties wishing to use W. and C. Mather's piston, that they have nothing to fear from the caution which accompanied the advertisement referred to, or the unfounded reports which are industriously circulated from the same quarter.

Locomotive and other pistons guaranteed for twelve months.  
Salford Iron Works, Manchester, Sept., 1847.

## IMPROVED LIFTING JACKS.

JACKS, IMPROVED RATCHET JACK, HALEY'S PATENT LIFTING JACK.

MANUFACTURED BY W. AND J. GALLOWAY, PATENT RIVET WORKS, MANCHESTER.

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